The Mining Journal

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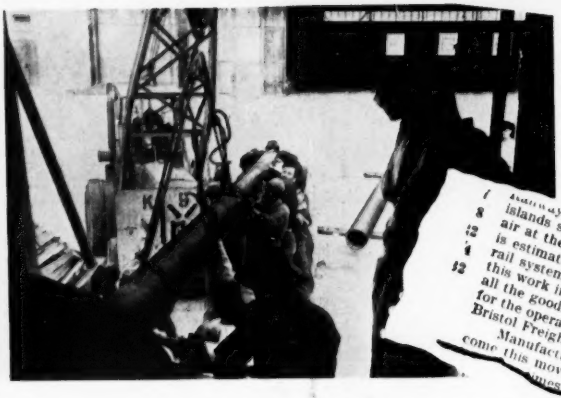

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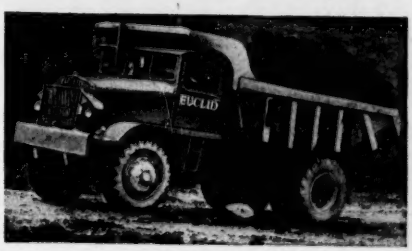

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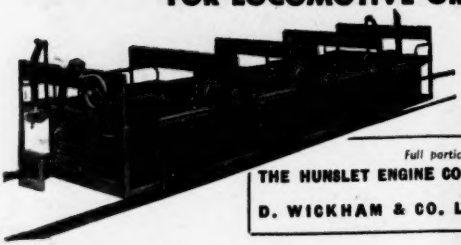

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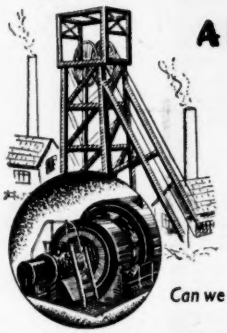

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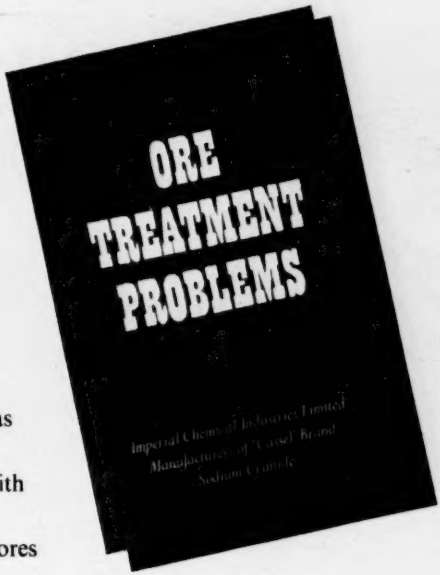

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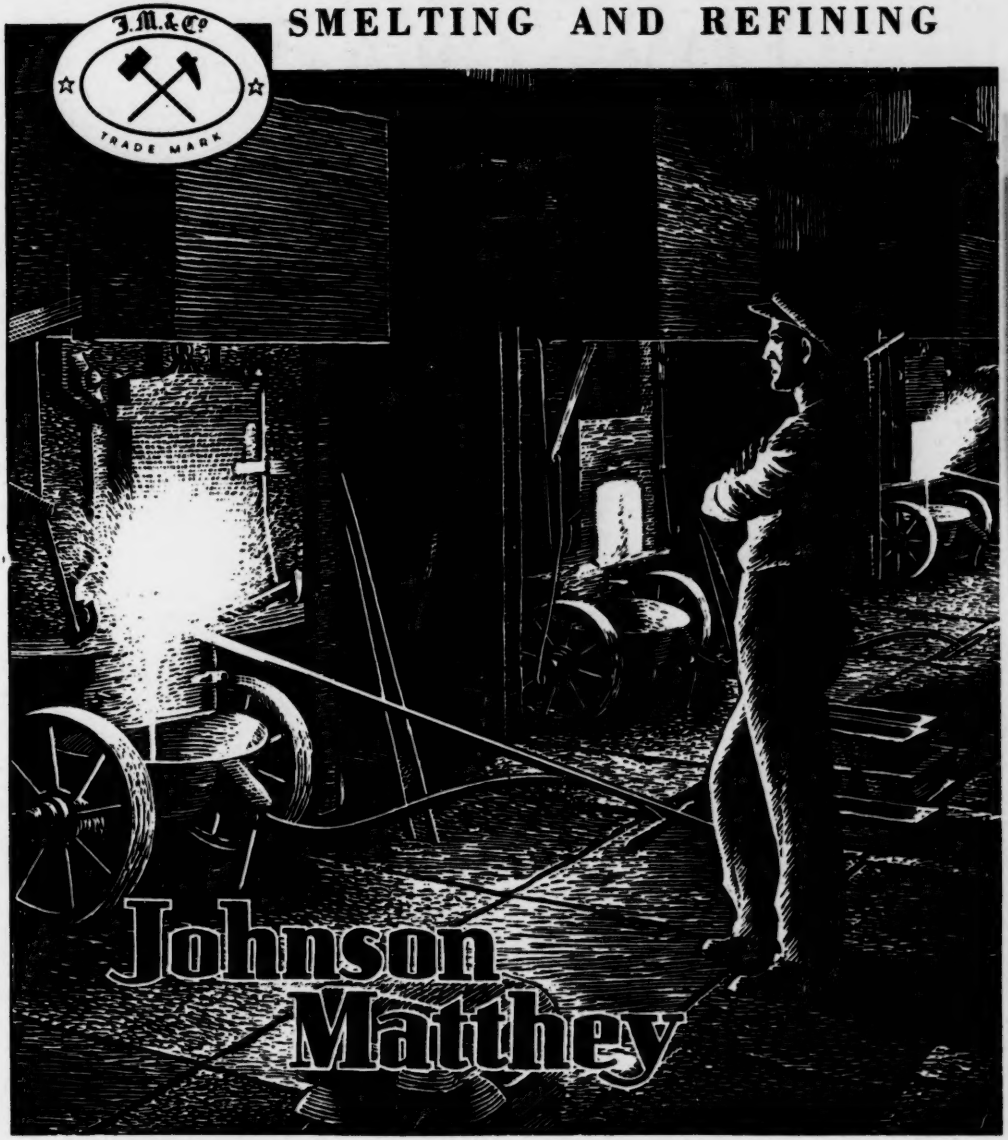

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NOTES AND COMMENTS

Cyprus' Bumper Year

As *Mining Journal* readers will have gathered from our monthly reports of mineral exports, mining in Cyprus last year achieved record results. Mr. W. Parry James, Government Inspector of Mines, concludes his official report: "Never before has the mining industry been so active as during the year under review." In pre-war years a larger number of miners were employed—9,200 in 1938 as compared with 6,440 last year—but mechanization has now come to play a predominant part in mining operations, and labour generally was more than adequate for requirements. As a consequence, the industry was entirely free from labour disputes. For the fifth successive year the value of the mineral exports proved a record at £7,983,337, just over £2,500,000 more than in 1950. These striking figures are more of a testimony to the appreciation of metal and mineral values than to any expansion in actual mining production, which for the most part did not show any striking change from the figures of the previous year. Cyprus is a small area to support so large a volume of mineral shipments while the year under review showed little in the way of fresh discovery, and the Government Inspector evidently feels that new discoveries, or at any rate a sensible expansion in developed ore reserves is desirable. "While the urgent demand for sulphur, copper and other minerals continues," he writes, "the Cyprus mining industry should remain prosperous, provided a steady depletion of the reserves of pyrites is halted. But should a falling-off in the demand for mineral develop, the mining industry is vulnerable and liable to a severe slump."

The principal mine of the Cyprus Mines Corporation—Mavrovouni—worked steadily throughout the year, and 652,252 tons of cupreous pyrites were mined and despatched to the treatment plant at Xeros. This was an improvement on 1950, but was considerably under the tonnage extracted in 1949. The mill treated 567,842 tons of ore in addition to 1,091 tons of oxidized material stacked from pre-war days. This tonnage gave a total of 90,735 tons of 18.8 per cent copper concentrates; 377,015 tons of 50.2 per cent S. flotation pyrites; and 696 tons of cement copper grading 51.1 per cent metal; in addition 85,810 tons of cupreous pyrites were crushed and stockpiled. The acid leaching plant costing over £500,000 should have been completed in October but was about six months behind schedule in coming into operation. This plant comprises a roasting plant, an acid plant, a leaching plant and a cementation plant. The bulk of the 381,400 tons of flotation pyrites averaging 49.7 per cent S. were shipped to France, with lesser amounts to Holland, the U.K., Egypt and Italy. Italy took most of the cupreous pyrites containing 48.3 per cent S. and 2.7 per cent Cu., with Germany taking most of the balance. Of the copper concentrates, averaging 18.4 per cent Cu., about 70,000 tons went to Germany, 29,000 tons the U.S.A., and the balance to Italy. The Skouriotissa and Mathiati mines of the company remained closed, as did the Apliki mine, though here 2,522 ft. were churn drilled, but without any ore being encountered.

The Hellenic Mining Co.'s pyrites mine at Kalavasos worked steadily throughout the year, and 227,444 tons of ore were sent to the crushing plant at Vasalikos, yielding 161,744 tons of cupreous pyrites, nearly all of which was exported. However, the ore reserves are being steadily depleted, and in Mr. James' opinion it is improbable that any new sources of ore will be discovered to lengthen the life of the mine. 10,228 ft. were bored in the search for new ore bodies by churn and diamond drills, but no intersections of economic importance were reported. About 17 miles to the north-east of Vasilikos there is a smallish deposit of good grade ore from which 56,800 tons of pyrites were shipped to Vasilikos. Total pyrites exported during the year, principally to Germany was 207,194 tons averaging 47.05 per cent S. and 1.15 per cent Cu.

In the Limni concession of the Cyprus Sulphur and Copper Co. the body of zinciferous copper pyrites located at Kinousa a few miles east of the original mine, in 1950 was under development and by the end of the year 240,000 tons of high grade ore was reported available for shipping. However, the report states that a great deal more development work will be required to admit of an accurate estimate of its potential size and value. A start to ship ore was expected early in the current year; so far two small two-compartment shafts have been sunk from which development proceeded. Meanwhile an adit has been driven to-

wards the ore body and was 829 ft. in at the end of the year. From the Limni section of the lease 2,415 tons of shipping grade pyrites were mined.

The Cyprus Asbestos Mines at Amiandos had a busy year and just under 1,600,000 tons of rock were mined of which 457,911 tons were treated producing 16,909 tons of fibre. This was another record in the history of this concern. With the additional mechanization installed, the labour supply proved plentiful, being practically the same as in the previous year. The asbestos cement sheet plant was enlarged and a quantity of sheet exported for the first time.

The output of Cyprus Chrome Co. operating on Troodos suffered from the depletion of the ore reserves, and it was necessary to undertake increased development. The main shaft was deepened from 300 to 400 ft. and development work on the new horizon proved the ore body to persist and maintain values, thus the weak ore reserve position has been improved. The output of the year was 12,349 tons of chromite as compared with 13,079 for the previous year.

There was a decline in the export of terra umbra to 6,225 tons as compared with 7,063 tons in the previous year but the value declined substantially. The Umber Corporation of Larnaca was the chief producer, but the Limassol Chemical Products had a poor year, and shipped only 219 tons.

Gypsum exports showed a big reduction at 22,311 tons against 62,558 tons in 1950. The Hellenic Mining Co.'s subsidiary, the Gypsum and Plasterboard Co. continued its installation of a factory but owing to various difficulties encountered, only one unit of the calcining plant was put into commission, and 19,840 tons of raw gypsum exported.

At the Troulli Mine, prospecting and mining operations on a limited scale devoted chiefly to bentonitic clay was carried out, and 925 tons exported, chiefly to Israel. The demand for quarry materials for building purposes remains exceptionally active.

Uranium Prospecting and Exploitation in France and the French Colonial Union

In a paper read before the Société des Ingenieurs Civils de France, Professor Roubault, director of operations in the Commisariat à l'Energie Atomique, recently gave some particulars of the progress of the prospecting and working of uraniferous minerals in France and French possessions overseas. After tracing the history of earlier activities which could not compete with the richer deposits at Joachimstal and in Katanga and Canada, he said that prospecting was renewed in France after the last war, at Lachaux in the Puys de Dome, at St. Symphorien-de-Marmagne in the Loire, at Grury in the Saone-et-Loire, at Crouzille in Limousin, in Madagascar, and in French West Africa. Production was first started at Lachaux in 1948, but the principal centre now is at Crouzille, discovered at the end of 1948. At Grury, production is expected to start next year. Work has now been abandoned at St. Symphorien-de-Marmagne but prospecting is still being carried out in the Creuse, the Vendée, the Vosges and at Aveyron-par-Entreygues, and may be started elsewhere when funds permit. In Madagascar a lacrustine formation, the sands of which are impregnated with uranocircite in the district of Vinaninkaréna, is being tested, but prospecting of the pitchblende and niobotantalites in veins has not been successful. In Morocco, the presence of uranium in phosphatic rock is awaiting the results of the American work on the Florida deposits which has just started.

The result of these operations by the prospecting and exploitation branches of the Commisariat of Atomic Energy is said to have shown tonnages containing sufficient uranium to form a second atomic pile now in course of construction, with a third one to follow.

Australia

(From Our Own Correspondent)

Melbourne, June 1

Pegged prices for metals and the continuance of a quarterly adjustment of the basic wage, based on the cost of living for the previous quarter, impose a growing burden on the mining industry. The basic wage adjustment is particularly serious, for each rise automatically increases the cost of living, and consequently a further increase in the basic wage in the next quarter. Yet nothing has been done to remedy this pernicious system. The gold mining industry is affected more than any other branch, for at a price of £A.15 9s. 10d. per oz. many mines were on the financial borderline; sales on the free market, through the newly-formed Gold Producers' Association, have not given the hoped-for relief, for sales, so far, have not realized more than an additional £1 10s. per oz., whereas the basic wage increases at the rate of 8s. to 10s. per quarter. The situation is having a serious effect on the life of mines, for ore reserves must be continually revised, and the lower grade ore compulsorily eliminated may, through changing underground conditions, become, ultimately, irrecoverable. One mine of the Kalgoorlie group, the Paringa, has been forced by existing conditions, to close down, although a large tonnage below the present economic grade has been developed. For a similar reason the Mount Charlotte enterprise of Wiluna Gold Mines had to be abandoned. That the mines of the Golden Mile, Kalgoorlie, have been able to carry on against heavy odds is due to management and increased efficiency. Mechanization is playing a large part, and the use of loaders underground is a notable feature. A factor of equal, and possibly greater importance is improvement in rock drills and drill steel, enabling increased footage to be drilled in a given time, and consequently greater tonnage of ore broken per machine shift, and an increase in development footage per shift. By this means shortage of labour and reduced working hours have been largely offset.

On the power side, the cost of wood-generated power by the Power Corporation at Kalgoorlie increased so steeply, due to the cost of firewood, that there has been gradual changeover to coal, which will ultimately displace wood. The Lake View and Star, and Gold Mines of Kalgoorlie have their own Diesel-electric power plants, and the Great Boulder Co. is making good progress with the erection of a Diesel-electric plant on its own mine.

TAXATION

The evil influence of heavy taxation on all branches of the mining industry has been referred to previously. It continues to be a strong deterrent to new enterprise, and any effort to bring into production ore deposits which might be worked profitably at the present time, and help to reduce the shortages of a number of metals. There are small producers in the industry, and there could be more, who would make important contributions to the output of ores and metals. But the taxation position is such as to deter new enterprise, and there are existing producers who could increase their output substantially, but beyond a certain limit, the producer would receive little, if any, more for his increased effort and output than he gets at present. To every man financial gain is the spur to effort, and the incentive to effort is being persistently denied to primary producers, whether mining, pastoral or agricultural, while that section of the community which looks for its livelihood to these great industries, is favoured with increasing wages, decreasing hours of work, and a growing list of amenities which become more and more burdensome to those who have to provide the wages, a combination which is killing all initiative and effort amongst workers.

South Africa

(From Our Own Correspondent)

Johannesburg, June 3

For nearly sixty years the South African mining industry has taken no direct interest in the domestic political affairs of this country. It must be regarded, therefore, as significant of the gravity of the present constitutional and political crisis that in recent weeks leaders of the industry have been impelled to comment upon recent developments and warn the Government indirectly of the possible effects if the present line of action is pursued. Due weight must be attached to the fact that these utterances were forthcoming from two of the most conservative of the Houses.

At the annual meeting of the Rand Mines, Mr. W. H. A. Lawrence pointed out that the strength of South Africa's basic industries had been built upon co-operative effort both here and overseas, and that the country is still dependent on the maintenance of international understanding and goodwill. These were facts which could not be disregarded.

THE VOICE OF WARNING

At the General Mining meeting, Mr. C. S. McLean took the position even further. He stated that recent events had aggravated the problem of securing the capital from overseas which is so vitally necessary to bring the large number of new mines to the production stage. He expressed the hope that the proper and timely development of the new gold fields would not be delayed or curtailed. If this should come about, the possibility of increasing gold production, which is so vital to the welfare of the country, might receive a setback. The Union was dependent, he said, on outside sources for a large proportion of its capital needs, and this supply could only be expected if the country's policy and outlook were viewed in a favourable light.

It would be unfortunate if the mutual trust that had been so diligently fostered in the past disappeared, and particularly so at this time when capital requirements for development were still great.

Recent developments in the field of mining itself make it clear that the margin of time between the new producers coming into operation and the contraction or cessation of operations at some of the older mines is shrinking rapidly. Shortage of labour, inadequate supplies of power, and rising costs are pressing heavily upon an increasing number of producers, and the position is not being helped by the current low level of revenue from premium sales of gold. At the present time there are 13 mines—nearly one-quarter of the total—working at a profit of not more than 2s. 6d. per ton milled. New Modderfontein—which in its lifetime produced nearly 100,000,000 oz. of gold and distributed £35,000,000 in dividends—has now ceased large-scale operations. New State Areas has given notice of its intention to cease working. Other old-stagers can be expected to start fading out of the picture within the year or so.

Although not entirely unexpected in the light of the recent trend of operations, the news of the sharp deterioration in the position of Crown Mines since the end of last year has been an unpleasant disclosure. It now appears that the dyke in the southern section of the property has resulted in a downthrow of some 500 ft. and that values on reef are generally poor. As a result, it has been decided not to go ahead with the plans for ultra-deep development. As a result, the supplies of payable ore are now limited and next year a start will be made with extracting shaft pillars in the eastern section of the mine. Unless there is a radical change in the position from now on this—probably the most famous of all gold mines in the world—must be regarded as a dying property.

The situation at Robinson Deep is such that, as a result of higher working costs, it is no longer considered economic to sink tertiary shafts in to the deep southern area, and operations are being limited to those which can be served by the present series of sub-inclines. The long-term prospects of City Deep can be regarded as satisfactory, but delays in pushing on the sub-incline shafts beyond the control of the company, coupled with the low grade of ore which is having to be treated in the meantime, means that less gold and lower profits can be expected until 1954. Incidentally, the outlook for E.R.P.M. is much more cheerful, with better values being encountered than originally anticipated. Nevertheless, improving results from this concern alone cannot offset the declines of the other properties.

The position thus is that the opening up of the new mines must be pushed ahead with the minimum of delay and we are now entering the period when increasing finance is needed to pay for development and surface equipment. It will be recalled that the financial arrangements for the new properties were based upon a two or three stage scheme. The first was to carry through shaft-sinking programmes with a certain amount of development, at which point sufficient information would be available to justify going to the markets for the capital required to bring the mine to the production stage. Once this had been done, in some cases, the idea was to raise still further funds to pay for additional reduction units.

THE FINANCIAL ASPECT

Unfortunately in the majority of cases these plans have gone agley. Many companies have had to raise extra funds before the first portion was completed owing to unforeseen delays in shaft-sinking due to water troubles and the high costs of this work due to inflation. Furthermore, the general deterioration in the capital markets over the past year or so have not helped the situation. The domestic situation here over the past few months has made things much worse, and there seems little likelihood of anyone risking making share offers in the open market for some time to come.

At the moment financing is being carried out by loans from the financial houses, but it would be foolish to assume that this can be carried on indefinitely. If the new mines are to come to production as soon as possible and on as large a scale of milling as can be managed, fresh funds will have to be found over the next year or so. It is not to be wondered at, therefore, that the leaders of the mining industry are feeling concerned at the overseas repercussion of current political developments in this country.

Over the past month there has been some interesting news emerging from the Free State, particularly from the Van den Heeversrust corridor to the west of Freddies North. A "Freddies" borehole intersected two conglomerate reefs, the second assaying 1,005 in.-dwt., and a Geoffries-Middle Wits borehole encountered a similar formation not far away, assaying 830 in.-dwt. Subsequently, this hole penetrated a further series of conglomerates bearing quite encouraging values. This adds a little more to the jigsaw puzzle of this area and points towards the eventuality of one if not two mines coming into being in this area, apart from enhancing the prospects of possible valuable upper reef deposits in the Freddies North Lease Area.

The Outlook for Aluminium

In a recent report to the U.S. Defence Production Administration, Mr. Samuel W. Anderson (the Deputy Administrator for Aluminium in the Defence Production Administration) has made a very extended report which, though primarily directed to the possible requirements of the United States over the next six or seven years, contains much matter of general interest for world production and consumption generally. The following is the first portion of an extract of the full report.

The importance of aluminium in our economy, in our defence efforts and in war, stems from the fact that it is light, very strong when properly alloyed and subject to very little corrosion. Everyone is familiar with the fact that the modern aeroplane is made largely of aluminium. Without aluminium or some comparable light material, the aeroplane, as we know it, would be impossible. Aluminium should not, however, be unduly identified with the aircraft industry, as it is finding wider and wider uses in such diverse fields as transportation equipment, electrical conductors, building materials such as siding, roofing windows, etc., irrigation piping and tubing of all sorts, light-weight cast, extruded or stamped parts for machinery, and household utensils.

U.S. INTEREST

The U.S. Government's interest in aluminium, both past and present, stems from the fact that it is an indispensable or preferred material for the production of many weapons, especially aircraft.

As we look upon the evolving pattern of weapons, we are impressed with the mounting emphasis on lightness of weight. More and more weapons are becoming airborne and more and more, defence and attack are centering about aircraft with its multitudinous uses, guided missiles, rockets and other light weight items. It is, therefore, fair to say that the light metals, especially aluminium, are becoming increasingly the *sine qua non* of modern defence and attack.

We entered World War II with a capacity to produce aluminium at the rate of approximately 440,000 s.tons per year and with no stockpile of the metal. To meet this crisis, the Government and the industry proceeded to build at a very rapid rate, additional aluminium production facilities with a rated capacity of 735,000 s.tons per year.

Altogether, the Government and the industry spent, from Pearl Harbour to the completion of the programme toward the beginning of 1944, nearly one billion dollars which, at to-day's price, would doubtless be double. Of the new capacity created during the war, metal plants capable of producing 362,000 s.tons were subsequently dismantled because of their necessary location in high cost power areas.

Unfortunately, we were caught in the same web again in June, 1950. Suddenly again, in an emergency not of our making, we were confronted with an immense surge in the demand for this vital metal. Once again we are engaged in building at breakneck speed aluminium plants, fabricating facilities and raw material projects. By late 1953 we will have a capacity to produce virgin aluminium at more than twice the pre-Korean rate, for a total of over 1,500,000 s.tons annually.

It is expected, on the basis of the most recent studies, that these requirements will continue at about their present level through 1954. Since aluminium must be available about nine months ahead of the delivery of the weapons in which this metal is employed, this presupposes that the military establishment will be largely completed, including aircraft and the other aluminium-using weapons, by some time in 1955.

It is, therefore, fair to assume, provided there is no substantial change in the defence programme or the advent of war, that after 1954 the demands for aluminium for defence purposes will decline substantially to a rate adequate to take care of obsolescence, non-war attrition and maintenance. Although there is no official data presently available, I believe this will result in a drop to considerably less than half of the aluminium required annually for the building up operation. Thus, in 1955, a larger proportion of the then available aluminium should be at the service of the civilian economy—perhaps 85% of the total.

In addition to examining the problems inherent in our present defence programme, it is, of course, necessary for us to calculate what our position would be in the event that all-out war should unhappily develop. The requirements for aluminium for war purposes under such circumstances would, of course, sky-rocket from their present levels as the country geared itself for the conflict. At this stage in time and indeed at any stage in the perfecting of such plans, it is exceedingly difficult to forecast with any high degree of accuracy what the requirements of any given material may be under these circumstances. With the changing pattern of war strategy, however, to which I have previously referred, it would be imprudent to assume that the needs for aluminium in the event of war would be anything less than several times the amounts now absorbed in the defence effort.

The use of aluminium for non-essential civilian purposes would certainly be curtailed or largely eliminated, but there would still be a hard core of requirement which it would be impossible to cut off. Using only my own experience and judgment and relying upon no classified sources, I will hazard an estimate that when and if World War III gets into full swing, taking into consideration all the unknown factors, the undeniable demand for aluminium for war and essential civilian uses would more likely fall between 2,000,000 and 2,500,000 tons annually than any lower figure.

Aluminium is a young metal. It is being recognized by an ever-widening circle of businessmen as an attractive material to use not only in substitution of existing materials, but in the making of entirely new products. It is to be presumed that the history of aluminium in the future will not be unlike the early pattern of some of the older materials. The per capita consumption should increase over the next few decades but probably, as the metal becomes more and more widely used, the rate of increase in its consumption per capita will have a tendency to decline.

PER CAPITA USE

The per capita consumption of aluminium during the 20-year period from 1930 to 1950 has risen from 1.8 lb. to approximately 16 lb. This shows a doubling of the per capita consumption on the average of every six or seven years. Of course, the war years greatly influenced this rate of growth.

In the case of copper, an older metal with a long history the per capita consumption doubled from 1900 to 1918 and doubled again from 1918 to 1950. In the case of zinc, there has been virtually no change in the trend of per capita consumption in the last 20 years. In the case of steel, the per capita consumption has only doubled since 1907.

Obviously, from a statistical point of view, it would appear unlikely that the per capita consumption of aluminium would continue to double every six to seven years over the next decade or two. It is my personal judgment, however, that an average growth from 1950 for the next 10 to 15 years of about 5 per cent per annum per capita would not represent an unlikely development if aluminium were freely available. This would mean a doubling in per capita consumption in about 13 years.

There are several large potential uses of aluminium which one can see dimly to-day, but which have not yet become major factors on the demand side of the equation. The more important of these are the automobile industry, the production of tin containers, the building industry, the electrical industry and the steel industry. Mr. Anderson after dealing in some detail with the potential demand for aluminium from the above mentioned sources, referred briefly to the healthy future in store for magnesium, its principal rival, which may well capture some of the fields now held by aluminium.

PRICE

Before leaving the subject of future civilian demands for aluminium, Mr. Anderson considered the price structure. Aluminium is the only metal in wide use, the price of which to-day is less than before World War II. On a volume basis, it is by far the cheapest of the metals except for an approximately equal position for magnesium.

What does all this add up to as a picture for the future? Two specific proposals for a much increased supply are:

(1). To further expand the U.S. capacity to produce primary aluminium, and

(2). To arrange with the Aluminum Co. of Canada for substantially increased exports to the U.S.

The first half of this proposal would be an attempt to increase the capacity in the United States by the construction of new aluminium reduction facilities, together with enlarging the supplies of alumina and bauxite, to the extent of approximately 140,000 s.tons a year. It is presumed that this additional capacity might be obtainable through the entrance of new producers in the field or through expansion of the facilities of some of the existing producers, or both.

ARRANGEMENTS WITH ALCAN

The second half of the new proposals would consist of making arrangements with the Aluminum Co. of Canada (Alcan), one of the largest producers in the world, under which the latter company would agree substantially to enlarge its exports of virgin aluminium to the United States, beginning in the year 1955, beyond the presently expected exports of between 100,000 and 150,000 tons annually. At my request, the Aluminum Co. of Canada has made an offer under which it would commit itself to ship into the United States not less than 300,000 tons per year for the five years 1955 to 1959 inclusive, provided the United States Government would agree that, to the extent Alcan failed to find commercial buyers for this amount, the government would purchase at the then current U.S. price, not to exceed 180,000 s.tons per year of such metal. The offer from the Aluminum Co. of Canada does not request any other variety of financial assistance but would, of course, involve an expansion in the facilities of the company in Canada. The company is now engaged in a partial development of a very large potential power source in British Columbia (near Kitimat) and is also contemplating the possibility of further power installations in the Lake St. John Drainage Basin.

The present prospective supply, while it would not sustain a demand measured by an average increase in per capita consumption of as much as 10 per cent, would clearly cover the civilian demand through the year 1958 if that demand is measured by an increase from 1950 of 5 per cent per annum per capita. In fact, there would be surplus metal during the next few years. This same situation would obtain to an even greater degree if the increase in the demand for civilian use is measured only by a 3½ per cent increase per capita annually. If the supplies of aluminium were to be enlarged by about 300,000 s.tons per year through increased imports and additional production in this country, even larger amounts of metal would be available over and beyond the civilian requirements measured on say a 5 per cent per annum per capita increased rate.

Portuguese Mineral Trade

(From Our Own Correspondent)

Oporto, June 5

Somewhat unexpectedly, mineral output and exports from Portugal to the end of April this year have increased where a decline had been anticipated. A certain amount of machinery has been installed recently which has helped production but the uncertain outlook of markets and prices has probably led to those concerned being anxious to get as much as possible out while the going is good. The March production of wolfram was 415 tonnes; of tin ore 170 tonnes; of cupreous pyrites 62,374 tonnes; and of manganese 720 tonnes. Shipments for April were wolfram 433 tonnes; tin concentrates 133 tonnes, cupreous pyrites 21,653 tonnes, and white arsenic 121 tonnes.

Exports during the first four months of the year show that the United Kingdom has lost, at any rate temporarily, its long established position as the chief buyer of Portuguese wolfram and tin concentrates. The figures are as follows: for wolfram, U.S.A., 676 tonnes; U.K., 300 tonnes; France 217 tonnes; Germany 141 tonnes and elsewhere 9 tonnes. Exports of tin concentrates were the following: U.S.A. 234 tonnes; U.K. 108 tonnes; and Brazil 28 tonnes. Exports of metallic tin were 25 tonnes to the U.S.A., 5 tonnes to Austria, and 1.343 tonnes to Angola. During this period 93,710 tonnes of cupreous pyrites were shipped, France taking 61,088 and Belgium 14,380 tonnes. Shipments of manganese were 1,780 tonnes and of white arsenic 406 tonnes. Exports of iron ore were approximately 12,000 tonnes.

The shift in the destination of exports suggests that a great majority of the local mines may not find their position too stable if and when United States demand contracts and they find that Britain, their former principal buyer, has made arrangements with other countries offering greater service and greater facilities.

Already the recent fall in the price of wolfram in the U.S.A. from $60 to $57.50 per s.t.u., f.o.b. Oporto is causing dealers to turn over from wolfram to cassiterite. A certain tonnage of tin slag has been exported to Germany. Exports of iron ore to the U.K. are on the increase; there has, however, been a considerable fall in the shipments of cupreous pyrites. Exporters who applied for permits to ship to the U.K. have been notified to present proof of sale to the Export Licensing Department. Some of these applications were presented over a year ago. The statement in the International Metals Conference Report recently that most of the signatories to the 1951 pact have rendered all possible assistance has not gone unnoticed here.

Mineral Industries of W. Europe in 1951

The following resumé of the main developments last year in the mineral industries of Western Europe, was prepared by John M. Warde, chief of the European Division, U.S. Bureau of Mines. Percentage changes are based on reported statistics for eight to ten months.

Production of minerals and metals in Western Europe continued to increase in 1951. Hard-coal output at 439,400,000 tonnes was up about 4 per cent over 1950 but the rate failed to keep pace with demand and the failure to increase coal output more rapidly was the basic factor impeding expansion of heavy industry. This deficit required the importation of 30,000,000 tons of coal from the United States during the year, creating a drain on scarce dollar and gold reserves. In addition, the loss of Iranian oil brought about an additional dollar outlay.

Apprehension over the threat of raw material shortages plagued Western Europe at the beginning of the year, but gave way to the fear that production would be seriously curtailed by the increased dollar shortage and contraction in exports in the closing months. Although supplies fell short of requirements for many commodities, Western Europe's over-all position was improved over 1950.

The most outstanding development in the field of Western European co-operation was the signing of a treaty by representatives of six European governments for the creation of a European Coal and Steel Community, popularly known as the Schuman Plan. This plan provides for the formation of a single market for coal and steel, to service more than 190,000,000 people in France, Belgium, Italy, Luxembourg, the Netherlands, and Western Germany. Another important development was the establishment, in Washington, of the International Materials Conference during January, 1951; its purpose was to distribute scarce raw materials equitably. Marshall Plan funds continued to play an important rôle in the rehabilitation of the minerals and metals industries of Western Europe during the year. The Economic Co-operation Administration ceased to exist as such at the end of 1951 but was replaced by the Mutual Security Agency.

Consumption of copper, lead, tin, and zinc increased over 1950 because of the rise in the industrial level. The tin market was notably disturbed by United States efforts to lower prices. In an attempt to offset the tight raw material supply situation, the principal nations increased controls. The sulphur shortage, which caused grave concern in some Western European countries at the beginning of the year, was generally eased by better distribution of the available supply.

DEVELOPMENTS BY COUNTRIES

Reviewing developments by countries, the author states that in the United Kingdom coal production was up 3 per cent over 1950 (219,800,000 tonnes) but increased home needs made necessary further curtailment of exports plus the purchase of 20,000,000 tons of coal from the United States. Copper, zinc and nickel were in short supply and drastic cutbacks in consumption were announced by the Ministry of Supply. However, aluminium was less difficult, owing to increased exports from Canada. Lead supply was adequate for controlled uses, and shortage of sulphur, which was acute in the spring, was eased before the year end by allocations through the International Materials Conference and through re-opening of abandoned pyrite mines.

The French economic scene was dominated by a sharp decrease in dollar availability and a decline in export trade. Bauxite output increased 20 per cent over the previous year (796,000 tonnes) and aluminium production was up 50 per cent over 1950 (60,714 tonnes). Smelter production of lead was 16 per cent below 1950 output (61,236 tonnes).

In Belgium, hard-coal production increased 9 per cent over 1950 (27,300,000 tonnes) and increases in smelter output of lead, and zinc over the 1950 production of 62,094 tons, and 177,326 tons, respectively, were 3 and 16 per cent.

Italy's lead output (smelter) fell 16 per cent below 1950 levels (37,469 tonnes) but zinc production was 25 per cent over 1950 (38,119 tonnes). The Italian Government, with E.C.A. assistance, intensified efforts to improve sulphur production, allocating about $13,000,000 for new sulphur mining equipment. Fluorspar production rose 50 per cent over the previous year (31,611 tonnes).

In Western Germany, new iron ore discoveries were reported in north-west Germany. Expansion of facilities for zinc mining and smelting by the Stollberger Zink A.G. was commenced with E.C.A. assistance. Smelter production of lead was up by 9 per cent over 1950 (100,000 tonnes), iron ore production was up 22 per cent over 1950 (10,800,000 tonnes), potash output was 28 per cent above the previous year (911,600 tonnes, K_2O equivalent) and crude oil production for the first time exceeded 30,000 bbl. per day.

Production of magnesite in Austria was up 11 per cent over the 1950 level of 543,817 tonnes. Aluminium production was up 50 per cent over 1950 output (17,744 tonnes).

A RECORD OF STEADY INCREASE

Greece's mineral production increased moderately, largely through financial aid furnished by E.C.A.; important projects undertaken or continued were development of the lignite resources and expansion of output of manganese, lead, chrome, bauxite and magnesite.

The Norwegian Government provided a loan for the development of large lead-zinc reserves at Kargan in Northern Norway; a new loading quay for handling iron ore from Northern Sweden was completed at the ice-free port of Narvik; plans were announced for the construction of a large aluminium plant at Sundaalsora, to be partly financed by E.C.A. funds; production to commence early in 1954.

Aided by E.C.A. funds, operations were commenced in Sweden to expand lead production in the Garpenberg field and plans were under consideration for the development of the pyritic ore deposit at the Rudjebacken mine in Northern Sweden.

In Spain, old pyrite mines are being re-opened and plans were made for the erection of a plant to extract sulphur from anhydrite. Lead production (smelter) was up 20 per cent over 1950 levels (34,876 tonnes).

Reports from Yugoslavia indicate that mining and metallurgical targets in the Five Year Plan were not met, but there was increased output particularly of coal and petroleum. An International Bank loan of $28,000,000 was under consideration for the modernization of the coal and copper industries. Plans were announced for the modernization of the Jesenice Iron and Steel Works; a new blast furnace was blown in at Sisak Iron and Steel Works. Expansion plans for the aluminium industry, calling for the doubling of capacity at the Sibenik works and the erection of new plants in Slovenia and Herzegovinia were discussed; this expansion is expected to raise aluminium output to 13,000 tons per year.

The Asbestos Deposits of Western Australia

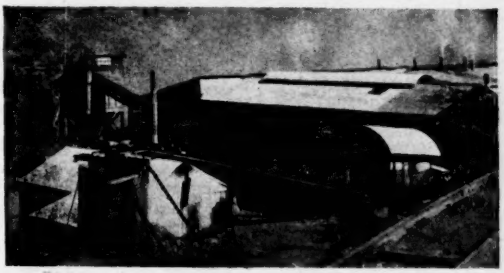
Western Australian Government publications since the Second World War have stated that reserves of blue fibre asbestos in the State might be assessed as able to withstand any calls made on them for at least a century. The following article gives details of the general asbestos deposits of the region.

Far up the remote coast of Western Australia, 1,200 track miles from Perth, lies the little town of Roebourne. Two hundred miles eastward from here are the asbestos fields of Wittenoom's Gorge, that have been proved to run for one hundred miles. It is stated that the asbestos in sight on this field may well be worth more, at pre-war prices, than all the gold ever taken out of Australia.

CURRENT COMMERCIAL DEVELOPMENTS AND PRODUCTION

A subsidiary of the Colonial Sugar Refining Co., among other interested parties, has taken over the field and is spending considerable sums in preparation of a large output. Miners are a composite of born Australians and immigrants from Europe, and the town itself is situated at the mouth of the gorge. The general situation is currently one of isolation with climatic conditions predominantly dry broken by sudden excesses of rainfall.

In the past, gold has been sought in this district to supplement the quantities of gold bullion that have been won from Western Australia. To the south there are deposits of silver lead. To the north-east in the Pilbara district, prospectors have discovered other mineral deposits.



Courtesy of Australian News and Information Bureau

Crushing plant at Wittenoom's Gorge. Dust is seen rising from the vents.

The *Mineral Resources of Australia: Summary Report No. 17: Asbestos:* states that the most important deposits of chrysotile asbestos in the Commonwealth are in New South Wales and Tasmania as well as Western Australia. Deposits of crocidolite occur in South Australia and Western Australia, with those of the latter State by far the more important. In the quarter ended June 30, 1951, chrysotile asbestos production in New South Wales was 69 ore or conc. tons of fibre and 21 ore or conc. tons of fines. During the same period Western Australia produced 101 ore or conc. tons. Western Australia thus earned £A.5,556 of the joint chrysotile asbestos income which between the two States totalled £A.12,569 for 191 tons. Australian production in 1950 of all types of asbestos was 1,617 tons.

THE WESTERN DEPOSITS IN PRECIS

In the Hammersley ranges of the Roebourne district, Western Australia possesses blue asbestos of excellent quality. Besides the activities of the subsidiary of the Colonial Sugar Refining Co., another company was lent £A.27,000 by the State Government, and overseas concerns have become interested in the area. Since the termination of the 1939-45 World War, Western Australian Government publications tell that chrysotile asbestos mining has been carried out sporadically by individuals and small companies in the North West for nearly forty years. Lack of continuity in supplies had militated against large scale development of the industry.

Anthophyllite asbestos occurs in commercial quantities within a reasonable distance of Perth and in close proximity to a railway line. The convenient location of the deposits should make their exploitation a simple matter, always providing that market demand and price factors can be the subject of satisfactory adjustment. The pre-war consumption of raw asbestos in Australia amounted to some 15,000 tons valued at approximately £A.400,000. It is of interest that the entire amount of this consumption was imported from South Africa and Canada and consisted almost entirely of short fibre, suitable for asbestos cement products.

Seams of crocidolite have been worked in four principal localities namely, Yampire Gorge, Wittenoom's Gorge, Dale's Gorge and Marramamba.

THE CROCIDOLITE DEPOSITS

A summary report of the mineral resources of Australia tells that in Yampire Gorge, seams of crocidolite have been exposed in the gorge over a total length of three miles, and occur in two stratigraphical horizons 150 to 200 ft. apart. The lower horizon has been benched intermittently for a mile in the upper, or southern, end of the gorge, and consists of two marker beds of riebeckite rock 4.5 ft. apart with which are associated several seams of crocidolite ranging from ¼ in. to 2 in. wide. The beds dip gently to the north and the lower horizon passes under the floor of the gorge.

A little over three-quarters of a mile to the north, the upper horizon is exposed in the gorge and has been benched at intervals for nearly two miles. In most of these workings the horizon consists of a marker bed of riebeckite rock with one or two seams of fibre above and below it, the aggregate thickness of fibre being about two inches over a vertical interval of 2 to 4 ft. The length of the fibre varies from ¼ to 2¼ in. (Finucane, 1939). The production from individual localities is not shown in the records. A mill was installed in the Yampire Gorge area in 1939.

THE WITTENOOM'S GORGE DEPOSITS

In Wittenoom's Gorge, asbestos seams occur 150 to 200 ft. above the floor of the gorge. The horizon contains a prominent marker, consisting of 6 in. of quartzite overlain by 10 to 15 in. of dolomite and immediately below the quartzite lies the main seam of crocidolite. This has been exposed in benches of 1,400 ft. and occurs in flat attenuated lenses 400 to 500 ft. long with the maximum development of fibre, up to 2 in. long, in the central portion of each lens.

About 4.5 ft. above the main seam lies the lower ribbon, consisting of four to seven seams over a thickness of 18 in., carrying fibre ¼ to ¾ in. long. Twenty to thirty feet above the marker an upper ribbon, 18 in. thick, is found, consisting of eight to ten seams carrying fibre ¼ to 1¾ in. long.

Diesels for Development

The following article, which first appeared in *Optima*, Vol. 2, No. 2, June 1952, a quarterly review published by the Anglo American Corporation of South Africa, gives details of current uses of Diesel-powered haulage in development ends.

Modern gold mining practice has made it necessary to improve the existing methods of handling gold-bearing ore and waste rock during the development stage of a mine. Equipment must be provided to handle rock as expeditiously as possible, as blasting occurs in a high-speed development end as often as six times per 24 hours. To obtain these results, all rock that has been blasted must be removed from the scene of operations to main tips quickly and efficiently. Modern mining practice has been to mechanize this operation, and the locomotives to transport the broken rock have to be of a very high standard.

When development headings are being rushed through, it has been found convenient to employ Diesel-powered locomotives to transport the broken rock. Diesel units are flexible in operation; they do not require charging stations to be cut underground; and they are completely self-contained. If a suitable type of Diesel is chosen for the work, servicing is a relatively simple matter. Originally, when high-speed development started on the new Orange Free State mines, three small units—3½-ton Diesel-powered locomotives—were used to clean out a heading; but, as the heading advanced further from the tips, the operation became less efficient, and it was decided to instal a 10-ton Diesel locomotive to pull a larger load at a greater speed to cut down the delays due to transport difficulties.

The 10-ton locomotive under review is fitted with a 4-cylinder 4-cycle Diesel engine of the cold start type, rated at 65 h.p. at 1,700 r.p.m. The engine is designed to consume standard fuel at the rate of about 0.4 lb. per b.h.p./hour. The maximum engine speed has been limited to 1,700 r.p.m. for maintenance purposes and to prolong engine life. A mono-block type 4-cylinder fuel pump is employed, with a hand-priming attachment for starting in very cold conditions. The engine is fitted with a decompression device for normal hand-starting. The locomotive is fitted with an air compressor and receiver for operating with compressed air brakes. A hand-applied brake is also fitted Lights on the locomotive are supplied from a D.C. generator driven from the engine; a storage battery is not used. The main drive of the unit is through a clutch and multi-speed gearbox; and the transmission to the main driving wheels, of which there are four (24 in. in diameter), is by external connecting rods. The overall dimensions of the locomotive are 12 ft. 9 in. long and 5 ft. high, and the wheelbase is 4 ft. 3 in.

The locomotive frame is made from a high-duty iron casting with lifting holes at each end for transport purposes. The locomotive operates in either direction, the driver having a clear vision irrespective of direction of travel. There are two speeds—4½ and 9 miles per hour—which have proved very satisfactory.

The locomotive is fitted with an exhaust-gas conditioner for "scrubbing" the gases as they leave the engine. The exhaust-gas conditioner is a welded box made of stainless steel, and is located within the frame at the front of the locomotive. This exhaust-gas conditioner arrests large quantities of free carbon in the chamber, liberated during combustion, and helps to cool the gas. If the engine is being properly serviced and is in good condition, the amount of carbon monoxide liberated can be disregarded; it will not pollute the mine air.

The unit has been handling 15 five-ton drop-bottom-discharge hoppers per trip. The train crew consists of a native driver and a native guard, who control the operational details, such as connecting up the train prior to dispatch to the tips and ensuring that the regulations laid down by the mine management are carried out. These natives are given a comprehensive test when being examined for locomotive drivers' certificates issued by the resident engineer. They are required to know where the locomotive is to be oiled and greased; where water is to be added; when brakes are to be adjusted; and how to keep the unit clean.

It has been found that a very strict maintenance schedule must be kept to obtain the best results from this unit. Daily inspections are carried out by the European artisan in charge of the maintenance, and it is his responsibility to see that all details—such as crank case oil level, gearbox oil level, condition of fuel filters, water in exhaust washing plant, condition of brakes, etc.—are checked. Once per week the crank case oil is changed and all fuel filters replaced. Axle boxes and other driving gear are also checked. A complete record of all work done on the unit is kept and can be referred to at any time in the resident engineer's office.

The satisfactory operation of Diesel locomotives underground depends entirely upon the standard of maintenance given to them and the careful filtration of all fuel oil. Fuel oil conditioning is one of the most important factors. The fuel oil being used in the 10-ton Diesel locomotive now operating underground is fed through a chamois leather filter before entering the main fuel tank, and is not allowed to be fouled by any type of abrasive substance. The main fuel tank is fitted with a soft and hard-core felt filter, through which the fuel passes before entering the main filter on the engine itself. From this filtering, perfectly clean fuel oil is fed to the injection system. It has been found that if the injection system of a Diesel locomotive is kept in perfect condition, the incidence of black smoke from the exhaust is kept to a minimum, and the objectionable conditions resulting from bad maintenance are entirely eliminated.

The flexibility of a large Diesel locomotive is considerable; it can be moved freely from one level to another. One disadvantage in using Diesel locomotives underground, however, is that heat is liberated during operation and dispersed into the ventilation system; but, if sufficient air is circulating in the haulage, this disadvantage is easily overcome. Any Diesel locomotive must be operated where the ventilation conditions are of a high standard; otherwise, the smell of concentrated exhaust gases is most objectionable

It is felt that the use of the larger type of Diesel locomotive for main line underground operation is practical.

International Machine Tool Exhibition, 1952

The International Machine Tool Exhibition, organized by the Machine Tool Trades Association of Great Britain, will be held at Olympia from Wednesday, September 17, until Saturday, October 4. About 2,000 machines will be assembled and the exhibition area will comprise approximately 500,000 sq. ft. Countries represented will include Great Britain, U.S.A., France, Belgium, Italy, Germany, Switzerland and Scandinavia, and overseas visitors from every machine tool using country of the world will be at Olympia during the period of the Exhibition.

MACHINERY AND EQUIPMENT

A New Cement Spraying Process

In the light of modern mining developments all over the world, the announcement of the Aerocem cement spraying process is of interest to the mining engineer. The process and its ancillary equipment are presented by the manufacturers as simple in operation and portable, and the whole therefore has possible applications in the erection of structural works of all kinds underground. Its scope in this respect would naturally be dictated by local conditions.

Yet mining in the mid-twentieth century presents an international overall endeavour of many facets, not the least of which is the housing of underground workers. And Aerocem, an aerated cement spraying process that will place mechanically aerated cement and other aerated cementitious compounds, has a particular application to the erection of all types of surface structures. It is presented as having already been utilized for building in parts of Britain as well as in more tropical areas.

The main uses of the Aerocem process are the supply of protective waterproof coatings, fire resisting cladding and the presentation of thermal insulation treatment. Closely related benefits are the cement washing of steel work and mechanical plastering, while listed prominently are the aerated concrete cladding of corrugated iron and asbestos buildings as well as the construction of all types of cellular concrete walls, roofs and ceilings. Use of the process is noted in the construction of colonial workers' houses, as well as in the erection of water-tanks, irrigation ditches, and other structures.

The Aerocem Cellular Concrete Aero Mixer is a portable petrol engine-driven plant comprising a 3 b.h.p. petrol engine. A 24 in. diameter container has a rapidly rotating central shaft equipped with three detachable and adjustable pitched water screw type mixing blades 5 in. long by 4 in. wide and three detachable and adjustable foaming blades 2½ in. long and 1½ in. wide, the whole possessed of a maximum speed of 800 r.p.m. The apparatus is presented as capable of producing 4 cu. ft. of Aerocem cellular concrete every five minutes.

Other portions of the equipment unit are the Aerocem gun, and the Aerocem Pressure Pot both made in two sizes. Mark I with a capacity of 2 cu. ft. and Mark II with a capacity of 4 cu. ft. The pots are in production for the manufacturers by Messrs. Vickers Armstrongs Ltd. Each pot consists of seven parts and is provided with four detachable castor wheels. The pots are designed for 60 lb. pressure and 180 lb. test pressure.

The manufacturers state that Aerocem holds the world patents for spraying aerated concrete.

A Redesigned Bulldozer Blade

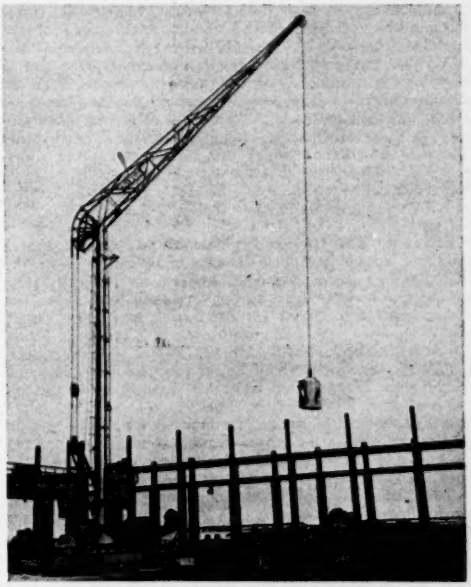
The M.S.A. announces that a bulldozer blade redesigned by the addition of a drop cross section and a vertical fin has expedited the widening of a roadway in America. The new specially reinforced equipment has sufficient traction and digging force to accomplish with ease the clearing of the hard, encrusted material which so often occupies road shoulders. The drop cross section assists in the gauging of the blade for depth and alignment, and the fin clears the spoil to piles at the side of the road.

This redesigned apron provides a trenching blade. The upper section of the apron rests on the pavement and serves as a guide to establish the widening blade in line with the roadway. It also determines the depth of the excavation. As the drop section excavates spoil, compacted gravel, and bituminous coating, a vertical fin at right angles to the apron ejects the spoil sideways so that it is deposited out of the operational zone at the edges of the widened roadway. There seems little doubt that, by adding a fin and utilizing a two level blade of this type, a more efficient arrangement is obtained as compared with the standard bulldozer blade normally employed for this type of work.

An Electric Tower Crane

According to a comprehensive pamphlet recently received, W. E. Bray & Co., Ltd., was originally founded in 1911, and specialized in the manufacture of machine tools including shaping, drilling and grinding machines, centre lathes and repetition machinery. In 1934 the first hydraulic angledozer equipment was manufactured and subsequently hydraulic and cable controlled angledozer and bulldozer equipments and hydraulically operated scrapers for operation with pneumatic tyred tractors were developed. Towards the latter part of the war, earth moving equipment was further developed and became the main product of the company, and after the cessation of hostilities, the range of hydraulic pumps, jacks and control mechanisms was extended. In 1949 the company introduced to the British market the first all-British industrial hydraulic loading shovel, marketed under the name of "Hydraloader," and now the Brayda Electric Tower Crane has been added to the company's range of equipment since January, 1952. The unit is considered by the manufacturers to be a complete departure from convention.

In its construction, the Brayda Electric Tower Crane is riveted, bolted or welded in all main assemblies, with the base of riveted plate construction, the main frame of which is of plate girder form, carrying the slewing rack and base casting. The winch housing is of welded plate construction and the "A" frame welded channel. The mast is composed of three



The Brayda Electric Tower Crane Unit

sections, flanged and bolted together, with each section of welded plate. The mast is tubular, 35¾ in. in base diameter tapering to 21½ in. in diameter at the mast head casting. The jib is a welded tube structure and the wire ropes show luffing ¾ in. diameter ordinary lay 6 by 37, hoist 9/16 in. diameter, more rotating 7 by 17 and cab hoist ½ in. standard lay.

Mechanical operation notes show that reduction gearing gives a travel speed of 85 f.p.m. with track centres 120 in., 75 lb. rail. The slewing pinion is driven by a 3 h.p. electric motor through a 77.1 reduction gear. The speed of slew is 1.1 r.p.m., with a rotation through 360 degrees. The main hoist drum is driven by a 19 h.p. electric motor with a special safeguarded braking system. The hoist drum is driven through a 10.1 reduction box and a 2 speed reduction train. Normal speed of hoist is about 50 f.p.m. Low gear must be used for loads over 30 cwt. The derricking motion is by 9 h.p. motor through a 36 : 1 reduction, and two speeds are provided. The luffing time from maximum to minimum radius, 65 ft. to 20 ft. is approximately 40 seconds. For transportation purposes, the unit can be dismantled into five main sections.

METALS, MINERALS AND ALLOYS

No real progress has been made in settling the U.S. steel strike, negotiations between the two sides having again broken down, mainly on the issue of the Union shop.

Mr. Truman wants Congress to pass legislation permitting him to seize the steel industry, but the Senate has voted to ask the President to use the Taft-Hartley Law and seek a court injunction. The President considers that a couple of weeks would elapse before an injunction could be obtained, and even then there would be no assurance that the workers would obey the injunction order. The President apparently considers that passing legislation would be quicker and that the workers having heeded his seizure of the industry when, as was subsequently proved, his action was illegal, they would pay the same attention to the same action after it had been legalized.

The Department of Commerce has suspended all exports of steel for civilian use abroad. It is, however, allowing the export of defence supplies to the U.K. Steel losses occasioned by the strike were estimated, at the end of last week, to have amounted to some 6,000,000 tons.

Attempts by Republican Senators to amend the Defence Production Act seem, for the moment, to have been foiled. Had they been approved the work of the International Materials Conference would have become virtually impossible. These amendements provided that if the domestic supply of any commodity exceeds the amount needed for defence, stockpiling and foreign military aid, any person shall be free to purchase that commodity abroad, import it and use it. If the domestic supply is sufficient to meet all domestic needs no allocations shall be made. A third point is that no price ceilings shall be imposed on imported materials. International allocation of materials would thus become impossible, and if the U.S. were to have first call on scarce materials produced in the U.S., other nations would inevitably retaliate by refusing to restrict consumption of materials the U.S. needs.

COPPER.—The Ministry of Materials has decided that as it cannot at present follow the American market, owing to the confusion there, it would suspend the sales to U.K. consumers. Sales of copper against consumers' June allocations remain unaffected. Orders for July which were either posted on Friday, June 6, or submitted by telegram handed in before 2 p.m. on Saturday, June 7, will be accepted. Obviously, such a state of suspension cannot be tolerated for very long, and the Ministry has promised another announcement in the immediate future. Consumers have been able to buy against the following month's allocation, but how far consumers have in fact bought against the July allocation is unknown.

The Engineering and Mining Journal has published a statement giving details of the manner in which the average quotation is calculated. Daily prices are gathered and these are the weighted average of sales on each day. The weekly prices are the arithmetic average of the daily totals.

The American quotation for copper has been narrowing. At one time it was 27.50-36.15c. per lb. The lower price has come up to 34.50c. per lb. whereas the upper price has remained unchanged.

Further relief has been granted to the U.S. manufacturers of copper products. They were recently allowed to recoup themselves for 80 per cent of the difference between 27.50c., the old import price, and the actual price paid. They are now allowed to charge 80 per cent of the difference between 24.50c. per lb., the old domestic price, and the price paid. Assuming an average price of 35.50c. per lb. the manufacturers will be able to add 8.8c. to their price ceilings instead of the 6.4c. under the earlier arrangement. Even this concession is unlikely to please the manufacturers. N.P.A. will still have to allocate copper, and users will be obliged to accept 40 per cent of future allocations in the form of imported copper. The remaining 60 per cent will be domestic copper.

Many of the producers are dependent on low-priced domestic metal, and they are complaining that they will be forced out of business by the formula and the accompanying allocations. The U.S. Government is soon to confer with the industry; the manufacturers will doubtless urge the abolition of all price controls on copper and on copper scrap. And a new scheme seems likely.

Chile is faced with the possibility of another copper strike. This time it will affect Kennecotts El Teniente mines. The workers allege that an agreement granting them a 20 per cent increase has not been implemented, and that if the agreement is not fulfilled by June 21, the strike will begin on June 23.

The Chilean Central Bank has completed its first deal with the U.S. It covers 500 tons of copper at 35½c. per lb.

LEAD.—The plans to develop the lead deposits discovered at Mestervig, East Greenland, have reached a sufficiently advanced stage for the structure of the mining company to have been decided. It will be a joint State and private enterprise undertaking with a capital of 15,000,000 kroner. The Danish Government would hold 27½ per cent of this amount, and a number of Danish concerns would put up a like amount. The remaining 45 per cent would be supplied by Swedish, Norwegian and Canadian interests. An expedition is sailing to Mestervig before the end of June to investigate the proposition. A favourable report would mean that mining would begin, and this would involve the raising of a much larger capital.

TIN.—Bolivia has set up a minerals monopoly. From June 2, the State alone can export minerals and has set up the Minerals Bank of Bolivia for this purpose. The proceeds from these export deals is to be paid by the Minerals Bank into the Central Bank and foreign currency concessions will be allowed in specified cases. These are the purchase of machinery and necessary materials, prospecting, payment of technicians, import of goods not produced by Bolivia which are needed for the workers and the payment of dividends and amortization, provided that the balance sheet has been officially approved.

A former Consul General of Bolivia in New York is reported to have alleged that tin from Bolivia may soon be flowing to Soviet satellite countries.

ZINC.—The cut of £16 per ton in the price of zinc announced last week has been followed by a further reduction of £12 per ton in the official price. These changes have brought the price of zinc down to £138 d/d. consumers' works. The reductions are in accord with the Government's new policy of following changes in the American price. Weakness of the latter has been intensified by the steel strike in the U.S. which is relieving an already over-supplied market of part of its demand.

So far the Ministry of Materials has made no pronouncement on the question of zinc scrap. Officially, the price of zinc scrap remains at £142 per ton, or £4 per ton more than the price of virgin metal. The current value of zinc scrap is in the region of £90 per ton. The delay in adjusting the price of scrap to be in line with the virgin metal is undoubtedly the consequence of the Ministry considering the possibility of ending the price control on zinc scrap. This control was first put on in February, 1951, to discourage hoarding.

Production of slab zinc in the U.S. increased slightly in May to 84,188 s.tons, compared with 83,011 in April. Month-end stocks increased sharply to 32,946 s.tons compared with 23,433 s.tons at the end of April, reflecting the present weakening demand for the metal.

ANTIMONY.—The U.S. Bureau of Mines has estimated that world production of antimony in 1951 was 30 per cent larger than in 1950. The output of 65,000 tonnes compares with 50,000 tonnes in 1950 and an average of 40,860 tonnes for the period 1942 to 1946.

The domestic mine production of antimony in the U.S. is declining. The output in March was only 153 s.tons, a fall of 44 per cent as compared with the previous month. Imports of 1,183 s.tons in March were 5 per cent less than in February. Industrial consumption, however, increased by 11 per cent to 1,251 s.tons.

URANIUM.—The Cape Town political correspondent of the *Johannesburg Star* reports that the commercial production of uranium in South Africa will begin in August.

A large deposit of uranium reported to have been found in Nigeria would relieve the U.K. of much of the need to pay dollars for uranium, if extraction problems can be solved.

If these problems can be solved, production might reach 100 tons of uranium a year. The precise spot where this deposit has been found has not been reported, but it is disclosed that it is 20 miles from the nearest railway.

GOLD.—The President of the Board of Trade this week in Parliament in reply to a question as to why details of the imports and exports of all forms of gold and silver were not included in the Trade and Navigation report in the same way as for other metals, said that the exclusion conformed with the recommendations of the I.M.F., which, he understood were made because the impossibility of distinguishing between gold used as money and as a commodity. He thought that the real point was not the maintenance of secrecy but that the figures would be quite meaningless if published.

The London Metal Market

(From Our Metal Exchange Correspondent)

Tin has been a very dull market during the week with the daily turnover generally well below average and price fluctuations comparatively small. The drain on warehouse stocks seems to have been halted for the time being, and there was a small increase in the total figure at the end of last week. The backwardation has contracted slightly to about £6 per ton.

In the copper market the export price seems to be settling down after the recent confusion at around 35c. f.a.s. for prompt, and 32½c. for forward. Lead is steady in America but still under pressure on the Continent. We call the price about £105 per ton with very little business being done. Zinc is about £120-£125 per ton, and a settlement of the steel strike would have a steadying effect in America where stocks are piling up.

On Thursday the official close on the tin market was: Settlement price £977 10s., Cash Buyers £977, Sellers £977 10s.; Three months' Buyers £970 10s., Sellers £972. In the afternoon the market was steady. Turnover for the day was 125 tons. Approximate turnover for the week was 435 tons.

The Eastern price on Thursday morning was equivalent to £983 per ton, c.i.f. Europe.

Iron and Steel

The continuance of negotiations encourages hopes of an early settlement of the American steel strike, which jeopardizes, though it has not entirely stopped, steel shipments to the U.K. Shortening dates for delivery now indicated by Belgian exporters for certain finished steel products also indicates an easier tendency on the Continent, but the most hopeful development in the eyes of British steel users who are harassed by the steel shortage, is the rising trend of pig iron production.

Unable to obtain scrap for the melting shops in anything like the required quantities, steel makers are concentrating upon a substantial expansion of blast furnace outputs. Less than three weeks ago a big new blast furnace on the North East Coast was put into operation; this week another has been "blown in" and a third is nearly ready to come into production. It will mean the use of less scrap and more pig iron in the furnace mixtures, but it promises the restoration of the melting shops to normal working and a bigger output of rolled steel products.

Export business is distinctly sluggish, in consequence of the many restrictions on the flow of international trade. Modifications and relaxations may not be long delayed. Australia, for instance, badly needs British steel, and ways and means of overcoming the financial difficulties are now under consideration. In any event the British market could absorb almost any quantity of steel which is held up by the restrictions on overseas trade. Rationing is very severe and after the call for steel for re-armament has been met there seems to be precious little available for other purposes of a non-essential character. At all events the country requires all the material which both American and European makers can supply. Belgian and French exporters have increased to some small extent their shipments of billets and sheet bars, but their materials are still in short supply and the British Iron and Steel Corporation is endeavouring to encompass an acceleration of shipments to aid the re-rolling industry. The demand for sheets and plates is positively overwhelming and capacity of the mills will certainly be overtaxed to the end of the year. Railway and colliery equipment is also sought in much bigger tonnages than are at present available and there is a strong demand for structural steel which is only held in check by the restrictions upon capital expenditure.

U.K. PRIMARY METAL STATISTICS — APRIL
(long tons)

	Refined Copper	*Lead†*	*Slab Zinc*	*Tin Metal*
Stocks in U.K. April 1				
Government	55,265	92,954	35,751	200§
Consumers	24,090	17,644	17,638	4,303‖
Imports	20,817	10,617	19,805	189
Production	12,161	6,989	5,096	2,776*
Consumption	30,321	13,844	15,094	2,021
Exports & Re-exports	49	35	22	2,423
Stocks in U.K. Apr. 30‡				
Government	57,358	101,140	47,795	nil§
Consumers	23,462	15,109	17,077	2,460‖

(Source: British Bureau of Non-Ferrous Metal Statistics)

* Estimated by International Tin Study Group.
† Includes imported virgin lead and English refined from domestic ore and secondary metal.
‡ U.K. stocks of blister copper at the end of May were 27,086 tons; and of zinc concentrates were 38,095 tons.
§ Excluding strategic reserves.
‖ Including tin in official warehouses but excluding smelter carry over.

JUNE 12 PRICES

COPPER

Electrolytic ... ... £231 0 0 d/d

TIN

(See our London Metal Exchange report for Thursday's prices)

LEAD

Soft foreign, duty paid ... ... £129 0 0 d/d
Soft empire ... ... £129 0 0 d/d
English lead ... ... £130 10 0 nom.

ZINC

G.O.B. spelter, foreign, duty paid ... £138 0 0 d/d
G.O.B. spelter, domestic... ... ... £138 0 0 d/d
Electrolytic and refined zinc ... ... £142 0 0 d/d

ANTIMONY

English (99%) delivered, 10 cwt. and over ... ... £270 per ton
Crude (70%) ... ... £240 per ton
Ore (60% basis) ... ... 32s. 6d. nom. per unit, c.i.f.

NICKEL

99.5% (home trade) ... ... £454 per ton

OTHER METALS

Aluminium, £154 per ton.
Bismuth, 21s. lb.
Cadmium, 18s. 3d. lb.
Chromium, 6s. 5d. lb.
Cobalt, 20s. lb.
Gold, 248s. f.oz.
Iridium, £65 oz. nom.
Magnesium, 2s. 10½d. lb.
Osmiridium, £35 oz. nom.
Osmium, £70 oz. nom.
Palladium, £8 10s. oz.
Platinum (scrap), £33.
Platinum, £27/33 5s. nom.
Rhodium, £45 oz.
Ruthenium, £30 oz.
Quicksilver, £73 ex-warehouse.
Selenium, 25s. nom. per lb.
Silver (bar), 72½d. f.oz. spot and forward.
Tellurium, 18s./19s. lb.

ORES, ALLOYS, ETC.

Bismuth ... ... 50% 10s. lb. c.i.f.
40% 9s. lb. c.i.f.
Chrome Ore—
Rhodesian Metallurgical (lumpy) £13 per ton c.i.f.
" " (concentrates) £13 per ton c.i.f.
" " Refractory £12 12s. per ton c.i.f.
Baluchistan Metallurgical ... £14 16s. per ton c.i.f.
Magnesite, ground calcined ... £26 - £27 d/d
Magnesite, Raw ... ... £10 - £11 d/d
Molybdenite (85% basis) ... 103s. 1½d. per unit c.i.f.
Wolfram (65%), U.K. ... 485s. nom. c.i.f.
Tungsten Metal Powder (for steel manufacture) ... 35s. nom. per lb. (home)
Ferro-tungsten ... ... 33s. nom. per lb. (home)
Carbide, 4-cwt. lots ... ... £30 3s. 9d. d/d per ton
Ferro-manganese, home ... £43 15s. 2d. per ton
Brass Wire ... ... 2s. 8½d. per lb. basis.
Brass Tubes, solid drawn ... 2s. 1½d. per lb. basis.

THE MINING MARKETS

The gilt edged market during the current week was dull. Mr. Churchill's statement warning the country of the gravity of the economic situation and Mr. Boyd Carpenter's disclosure of the low-level of Britain's reserves, caused uneasiness in the Funds, while further rumours about the Bank rate and the prospect of a substantial coal stock issue at the week-end all combined to depress the market.

Under the lead of the Funds, Kaffirs opened the week poorly, but went on to enjoy a revival which was applicable to both dividend payers and developers alike. Paris buying was a feature here but the continued nervousness concerning the future of sterling was also a bull factor. Nor did the reduced dividends announced by the Goldfields Group cause any marked downward trend as the reduction had been anticipated and largely discounted. However, Luipaards Vlei, Robinson Deep, and Simmer all went a shade easier. Contrariwise, Vogels, which maintained its distribution at 1s., was a few pence better. Strong Cape buying of Spaarwater based on development rumours brought about a jump in the shares of 10½d. to 2s. 9d.

French support was also largely responsible for the improvement in both Daggafontein and East Geduld while buying from the same source helped lift Far West Rand shares and in particular, Blyvoors, to higher levels. Companies in the Strathmore group, headed by Stilfontein made headway.

Most of the O.F.S. shares advanced at the end of the week, President Brand rising 9d. to 19s. 3d. Harmony was a firm counter at 18s. 9d. demand being motivated by expectations of an early shaft strike.

Finance shares, on balance, were a good market. Union Corporation more than recovered previous losses on the announcement of a share split and good support was forthcoming for Anglo American. Central Mining was also prominent, while General Mining and Goldfields both hardened.

The Selection Trust dividend was announced during the week, the final payment of 3s. 3d. per share raising the total dividend payment for the year ended March 31 last to 4s. 6d. equivalent to 45 per cent and 12½ per cent more than for the preceding year. This was well received in the market and the 10s. units recovered to £2 at which price the yield comes to over 11 per cent.

The labour strike at Ashanti restrained demand for West Africans and at one point Ashanti dipped to 15s. 6d. before recovering to 16s. 6d. at the end of the week.

Bargain hunters were around for base metal shares. The underlying feeling being that the recent declines in the price of base metals had probably gone far enough. Coppers were a firm section but the revival in Kaffir market diverted buyers to some extent from this section towards the close of the period. Nevertheless, there was a good deal of activity in Rhokana, "Rhoanglo," and Nchanga. Perhaps the most outstanding counter in this section was Rhodesia-Katanga for which demand was persistent and the shares closed the week at 10s. 7½d.

Turnover in diamond and platinum shares was small although support was forthcoming for De Beers from Paris and Cape buying maintained platinum prices.

Gains in tins were widespread. Several good dividend announcements being an important factor here. Ipoh were 1s. better at £1, Malayan and Southern Tronoh hardened perceptibly, and Bisichi held at 4s. following the dividend announcement.

In lead-zincs, Consolidated Murchison was closely watched pending the dividend announcement. At the end of the week the share was being quoted at around £2.

The U.S. steel strike overhung dollar issues but movements either way were large.

Although the volume of business done in the oil share market was small, this section remained comparatively firm. Ultramars came in for a good deal of attention but finished the week down at 29s. resulting from sellers coming into the market after the issuance of its yearly report.

	Price June 11	+ or − on week
FINANCE		
African & European	2⅛	−⅛
Anglo American Corpn.	6	+⅛
Anglo-French	18/9	−3d
Anglo Transvaal Consol.	28/9	
Central Mining (£1 shrs.)	33/9	+1/3
Consolidated Goldfields	41/10½	−7½d
Consol. Mines Selection	23/9	
East Rand Consols	2/7½	−6d
General Mining	4½	−⅛
H.E. Prop.	32/6	+1/10½
Henderson's Transvaal	10/6	+9d
Johnnies	2⅜	−⅛
Rand Mines	4⅜	
Rand Selection	3/-	
Strathmore Consol.	26/6	−3d
Union Corporation	7⅛	−½
Vereeniging Estates	3⅛	−⅛
Writs	29/4½	−7½d
West Wits	41/10½	−7½d
RAND GOLD		
Blyvoors	39/9	+9d
Brakpan	17/-	−3d
City Deep	28/1½	−7½d
Consol. Main Reef	30/7½	−7½d
Crown	47/6	+1/3
Daggas	3½	+⅛
Doornfontein	22/3	−1½d
Durban Deep	3⅛	−⅛
E. Daggas	18/9	−7½d
E. Geduld ... (4/- units)	40/-	
E. Rand Props.	3⅜	
Geduld	6⅛	−⅛
Govt. Areas	11/-	
Grootvlei	30/9	−3d
Libanon	13/-	
Luipaards Vlei	17/6	−6d
Marievale	21/6	+6d
Modderfontein East	25/-	−1/3
New Kleinfontein	28/9	+7½d
New Pioneer	11/9	−6d
Randfontein	17/7½	−4½d
Robinson Deep	10/6	−3d
Rose Deep	25/-	−1/3
Simmer & Jack	5/4½	−1½d
S.A. Lands	39/4½	−1/3
Springs	7/1½	−3d
Stilfontein	23/3	+3d
Sub Nigel	2⅛	−⅛
Van Dyk	12/6	
Venterspost	19/9	−6d
Vlakfontein	16/9	−3d
Vogelstruisbult	26/9	+3d
West Driefontein	5⅜	−⅛
W. Rand Consolidated	49/4½	−7½d
Western Reefs	40/7½	−7½d
O.F.S.		
Freddies	7/-	
Freddies N.	6/-	
Freddies S.	7/-	
F.S. Geduld	2⅜	−⅛
Geoffries	16/3	−3d
Harmony	18/3	
Loraine	5/9	−6d
Lyttelburg Estates	9/9	−3d
Merriespruit	3/7½	−1½d
Middle Wits	14/3	−4½d
Ofsits	38/9	−1/3
President Brand	18/6	
President Steyn	18/6	−3d
St. Helena	16/3	
U.F.S. & G.	6/6	
Virginia Ord.	10/-	−3d
Welkom	28/1½	−7½d
Western Holdings	3⅛	−⅛
WEST AFRICAN GOLD		
Amalgamated Banket	1/3	
Ariston	5/3	+3d
Ashanti	15/9	−1/-
Bibiani	5/9	−4½d
Bremang	2/6	+1½d
G.C. Main Reef	3/1½	+3d
G.C. Selection Trust	6/-	+1½d
Konongo	2/-	
Lyndhurst Deep	1/-	
Marlu	1/3	+1½d
Taquah & Abosso	3/9	−1½d
AUSTRALIAN GOLD		
Boulder Perseverance	2/3	−3d
Gold Mines of Kalgoorlie	9/3	−3d
Great Boulder Prop.	5/-	
Lake View and Star	15/3	
Mount Morgan	18/6	+6d
North Kalgurli	12/6	−3d
Sons of Gwalia	8/6	
South Kalgurli	8/1½	
Western Mining	7/3	−1½d
MISCELLANEOUS GOLD		
Cam and Motor	38/9	
Champion Reef	6/9	+3d
Falcon Mines	7/10½	
Globe & Phoenix	24/-	+1/-
G.F. Rhodesian	6/-	−1½d
London & Rhodesian	4/3	
Motapa	1/9	+3d
Mysore	3/6	−3d
Nundydroog	5/6	
Ooregum	2/10½	+1½d
Oroville	10/9	
MISCELLANEOUS GOLD (contd.)		
St. John d'El Rey	23/9	
Zams	36/-	+6d
DIAMONDS & PLATINUM		
Anglo American Inv.	4⅜	−⅛
Casts	26/9xd	−9d
Cons. Diam. of S.W.A.	3⅜	−⅛
De Beers Defd. Bearer	61/-	−2/3
De Beers Pfd. Bearer	13⅜	−⅛
Pots Platinum	8/6	−3d
Watervaal	14/4½	−1½d
COPPER		
Chartered	59/6	+5/6
Esperanza	3/9	+3d
Indian Copper	3/9	
Messina	3⅜	+⅛
Nchanga	7⅜	+⅛
Rhod. Anglo-American	59/-	+4/3
Rhod. Katanga	10/-	+1/7½
Rhodesian Selection	16/7½	+1/3
Rhokana	21⅜	+1⅛
Rio Tinto	22½	+1⅛
Roan Antelope	13/6	+7½d
Selection Trust	38/1½	+1/3
Taxaks	58/3	−3d
Tharsis Sulphur Br.	40/-	−1/3
TIN (Eastern)		
Ayer Hitam	23/-	+1/9
Bangrin	8/1½xd	+1½d
Gopeng	10/6	+4½d
Hongkong	6/3	
Ipoh	20/-	+9d
Kamunting	10/3	+4½d
Kepong Dredging	7/-	+3d
Kinta Tin Mines	14/3	+9d
Malayan Dredging	22/3	+9d
Pahang	13/6	+6d
Pengkalen	8/-	−3d
Petaling	13/10½	+6d
Rambutan	11/10½	
Siamese Tin	20/3xd	+4½d
Southern Kinta	13/7½	+10d
S. Malayan	22/6	+6d
S. Tronoh	15/3	+9d
Sungei Kinta	17/6	
Tekka Taiping	7/6	
Tronoh	21/6	+10½d
TIN (Nigerian and Miscellaneous)		
Amalgamated Tin	9/3	+9d
Beralt Tin	20/-	+3d
Bisichi	4/-	+6d
British Tin Inv.	15/1½	+1/7½
Ex-Lands Nigeria	4/6	+6d
TIN (Nigerian and Miscellaneous) contd.		
Geevor Tin	11/3	+4½d
Gold & Base Metal	3/6	+6d
Jantar Nigeria	6/6	+7½d
Jos Tin Area	10/6	
Kaduna Prospectors	3/9xd	−3d
Kaduna Syndicate	4/9	−3d
London Tin	5/1½xd	+4½d
United Tin	2/1½	+3d
SILVER, LEAD, ZINC		
Broken Hill South	42/6	+1/6
Burma Corporation	1/6	−1½d
Consol. Zinc	24/4½	+2/4½
Lake George	14/3	+1/-
Mount Isa	34/6	+3d
New Broken Hill	23/3	+1/-
North Broken Hill	53/1½	+1/1½
Rhodesian Broken Hill	15/1½	+3d
San Francisco Mines	30/3	
Uruwira	5/1½	+7½d
MISCELLANEOUS		
BASE METALS & COALS	41/3	
Amal. Collieries of S.A.	44/-	+5/6
Associated Manganese	16/6	+9d
Cape Asbestos	44/-	+1/6
C.P. Manganese	30/-	−5/4½
Consol. Murchison	8½	
Mashaba	3½	−⅛
Natal Navigation	10/6	−3d
Rhod. Monteleo	80/-	
Turner & Newall	16/-	+9d
Wankie	2⅛	
Witbank Colliery		
CANADIAN MINES	$35	
Dome	$26	+$⅛
Hollinger	$99	+$2
Hudson Bay Mining	$80½	+$4½
International Nickel	£5⅛	
Mining Corpn. of Canada	$142	+$5
Noranda	£7⅛xd	+£⅛
Normont	4/7½	+1½d
Yukon		
OIL	5⅛	+⅛
Anglo-Iranian	40/-	
Apex	20/7½	
Attock	60/7½xd	+1/3
Burmah	31/3xd	+1/9
Canadian Eagle	22/1½	+4½d
Mexican Eagle	4½dxd	+⅛
Shell	26/9xd	+2/9
Trinidad Leasehold	25/-	+1/3
T.P.D.	29/-	−9d
Ultramar		

COMPANY NEWS AND VIEWS

Further Changes in E.P.L.

Government promises given during the Committee Stage of the Finance Bill to further amend the E.P.L. provisions were implemented by the publication of several amendments on Wednesday of this week.

The two chief amendments relate to the "franked" income of investment trusts, and allowances for mineral deposits of a wasting nature. Unhappily, the Chancellor has still not recognized in full the principle that the same income should not be taxed twice over, as he has kept franked income relief strictly applicable to investment trusts. The present position is that if more than 75 per cent of a company's capital is owned by another company it is a subsidiary, and if more than 25 per cent and less than 75 per cent is owned, the two companies would be members of the same group and income received by one from the other is excluded from the receiving company's profit calculations in both the standard and charegable years. Thus, there remains a gap where the parent company holds enough of the equity to afford control but is not a preference shareholders. Such a company will now be penalized if its subsidiary pays over an increase in its earnings.

The second amendment takes the form of an addition to Clause 52, and allows additional percentages in respect of mineral deposits of a wasting nature of any kind rather than as formerly where these additional percentages were only granted to metal mines and oil wells. The new proposal is that the Board of Referees, may, on application, raise the additional percentages (4, 8, 10, 12 and 14 per cent) by not more than 6 per cent. The underlying principle of this proposal for the Board of Referees is to be the extent to which the benefit received from the capital expenditure incurred may be exhausted at a greater rate than in the case of other classes of trade or business.

These amendments will be debated in the report stage of the Bill which is expected to begin in the House of Commons some time next week.

Pengkalen Earmarks £50,000 for Rehabilitation

The greater dredge throughput achieved by Pengkalen during the year ended September 30, 1951, practically nullified the disadvantages arising from the company's dredge working through lower grade ground and accordingly the final output figure showed only a modest decline of six tons compared with the preceding year. Increased prices for power, labour and materials generally, swelled mining expenditure but the big jump in the price received per ton ore more than offset this adverse feature and revenue from ore sales went ahead from £271,946 to £451,301. This was the chief item comprising gross revenue of £463,530 (£279,264), which figure, although materially reduced by working costs and taxation left a balance available for distribution greatly in excess of that available in the preceding year.

Year to Sept. 30	Per cubic yard Treated	Yield	Cost	Output (tons)	Per Ton Tin Ore Cost	Price*
	(000)	(lb.)	s. d.		£	£
1950	1,758.6	0.72	8.5	561	112	387
1951	1,923.0	0.65	10.5	555	152	645

*Less tribute

The allocation to general reserve amounted to £63,116 (£20,000), the sum of £2,135 (£2,313) was written off capital expenditure account and the total distribution on the ordinary issued share capital of £90,000 in 5s. shares was raised to 50 per cent (45 per cent) while the distribution on the preferred ordinary share capital of £70,000 in 5s. shares was stepped up to 60 per cent against 55 per cent in the preceding year. The carry forward at the fiscal year end was £34,387 compared with £20,851 brought in.

Year to Sept. 30	Mining Revenue	Mining Costs	Tax	Net Profit	Dividend	Carry Forward
	£	£	£	£	£	£
1950	271,946	106,606	94,974	67,531	43,450	20,851
1951	451,301	162,111	161,418	124,456	46,250	34,387

Mr. Stanley Wickett, chairman, in his statement to shareholders explained that of the £63,116 transferred to general reserve £50,000 has been earmarked against the amount which the company feels it will probably have to provide out of its resources when final settlement is made by the Malayan Government towards the cost of rehabilitating the company's plant and machinery. Since the end of the fiscal year the company's dredge has entered the river reserve released by the deviation of the Kinta River where dredging conditions have been good except for the occurrence of large timber in the old river bed which caused some lost time.

Hongkong Tin Produces Less but Earns and Pays More

Operating efficiency of Hongkong Tin during the year ended September 30, 1951, was hampered unduly by the stiff clays encountered by its dredge, by the lack of an adequate labour supply and, to some extent, by the continued terrorist activity in the vicinity of the mine. The volume of ground treated, the yield per cu. yd. and tin output were all down compared with the previous year while mining costs, due to the higher prices for fuel, labour and materials generally, rose by 20 per cent.

Year to Sept. 30	Per cubic yard Treated	Yield	Cost	Output (tons)	Per Ton Tin Ore Cost	Price*
	(000)	(lb.)	s. d.		£	£
1950	1,936.8	0.49	11.1	424	212	333
1951	1,780.6	0.47	1 2.9	354	314	627

*Less tribute

Nevertheless, the price received per ton tin ore improved by as much as £293 per ton which more than made up for the poorer operating results and revenue from ore sales expanded substantially. The tax attracted to the better financial returns was much heavier, but even so the company was able to allocate £30,000 (nil) to reserves, raise the total dividend distribution by 2½ per cent to 27½ per cent with enough to spare to lift the forward balance to £51,857 against £47,438 brought in.

Year to Sept. 30	Ore Sales	Mining Costs	Tax	Net Profit	To Reserve	Dividend
	£	£	£	£	£	%
1950	142,237	90,939	36,530	12,757	Nil	25
1951	221,855	110,895	66,206	42,294	30,000	27½

During the first six months of the current year the dredge continued to work through stiff clays. Consequently, production suffered and a loss of approximately £8,000 was incurred on operations in respect of this period. However, it is anticipated that this will be converted into a small working profit by the end of the current year. The company has received a further 15 per cent payment on its War Damage Claim making 75 per cent received to date and reducing the advance outstanding to £8,133 which further payments should fully cover.

Rand and O.F.S. Mine Returns for May

With the month of May allowing one day more for milling, crushing returns of the Rand and O.F.S. gold producers were on a higher scale. Thirty-nine mines dealt with more ore, four with less and two the same. Higher profits were announced by 35 mines; 10 were lower. Working costs on 31 were lower, 12 higher and two worked for the same figure as in April. The two new O.F.S. producers dealt with larger tonnages and announced higher profits.

In the Central Mining list, Blyvoor's profit was £42,703 more, Crown Mines over £4,800, Durban Deep £9,600, while costs were lower; those of City Deep were 2s. 6d. per ton higher but expanded tonnage and better yield resulted in a rise of £6,800 in profit. Modder B was the only member of the group to make a lower profit.

All the Anglo American mines suffered a set-back with lower profits and higher working costs with the exception of Welkom Gold which increased upon its first April profit of £1,043. Costs were given as 40s. 2d. against 42s. 5d. in April. Brakpan and Springs Mines dealt with the same tonnage as in the previous month; gold yield was slightly better but costs were up.

A good showing was made by the Gold Fields subsidiaries; all dealing with bigger tonnages, announcing higher profits and lower working costs, with the exception of Libanon. Costs here were the same as in the previous month and the higher tonnage enabled an increase of £2,845 to be made in profit. That of Robinson Deep was double the April figure of £6,015; Simmer was £7,000 better; Sub Nigel £14,000 and Venterspost £10,000. Among the new producers West "Dries" expanded production with an improvement of £28,131 in profit.

The gradual but consistent increases in St. Helena's revenue was continued, although the benefit of an additional 3,000 tons crushed was countered by a rise in costs. Of the other mines under the administration of Union Corporation, Geduld's costs rose slightly, as also those of Grootvlei.

West Rand belonging to General Mining, registered an increase of £23,800 in profit. The companion mine, S. Roodepoort made a satisfactory showing. Rand Leases (Anglo Transvaal) benefited by higher tonnage and lower costs. New Kleinfontein worked at the same figure of costs as in April and the expansion in tonnage enabled a better profit to be made.

The throughput of all "Johnnies" mines was higher, costs were lower and profits slightly better in the case of Champ d'Or, Wit. Gold and Randfontein; the latter's costs being 1s. 4d. per ton lower.

Although the major proportion of the mines reported higher profits in May the longer term trend shows that accumulated profits in the current year to date, with the exception of Blyvoors, South Roodepoort and New Kleinfontein, are lower than for the corresponding period a year ago. This conclusion is clearly brought out in the table below.

Company	May, 1952 Tons (000)	Yield (oz.)	Profit (£000)	Year ends	Current Financial Year Total to Date Tons (000)	Yield (oz.)	Profit (£000)	Last Financial Year Total to Date Tons (000)	Yield (oz.)	Profit (£000)
Gold Fields										
Libanon	82	16034	36.5	J	877	166,608	399	901	162,557	508
Luipaards V.	105	19962	54.4	J	1092	203,459	573	1113	206,412	725
Rietfontein	28	6272	28.6	D	135	29,969	139	136	30,242	159
Robinson	117	19305	12.8	D	554	89,988	47	541	86,563	68
Simmer & J.	132	20998	20.0	D	621	98,797	86	611	97,265	162
Sub Nigel	69	23857	126.8	J	730	255,235	1389	729	272,419	1714
Venterspost	105	23626	61.6	J	1085	239,275	674	1160	244,414	1033
Vlakfontein	39	14458	82.2	D	184	68,566	391	179	67,959	396
Vogels	85	22054	86.3	D	395	102,297	392	374	93,849	416
West Drie	26	13056	78.2	J	91	36,251	149	—	—	—
Anglo American*										
Brakpan	117	21352	34.5	D	569	105,020	188	563	105,720	300
Daggas	236	56156	397.6	D	1157	276,343	1963	1137	282,516	2189
East Daggas	96	17136	56.4	D	479	85,937	321	492	90,797	437
S. A. Lands	113	20358	70.0	D	554	100,058	365	559	97,756	397
Springs	169	22028	18.8	D	819	107,234	89	833	108,321	183
Welkom	52	9247	9.7	D	219	33,600	L92	—	—	—
W'tern Reefs	112	23418	102.1	D	547	115,086	516	469	106,650	560
Central Mining										
Blyvoor	114	69825	616.7	J	1193	754,864	6764	990	703,771	6521
City Deep	158	32930	30.2	D	770	154,918	138	807	164,652	408
Consol M.R.	197	26877	39.4	J	2093	286,474	463	2071	279,548	575
Crown	289	45531	43.1	D	1333	217,076	172	1354	232,996	574
D. Roodep'rt	190	32340	89.9	D	890	152,850	407	892	152,082	512
East Rand P.	220	45843	147.4	D	1038	224,001	782	1072	217,740	888
Modder B.	58	6471	6.3	D	284	31,298	35	271	30,770	47
Modder East	121	14250	25.2	J	1294	152,125	325	1334	160,115	550
Rose Deep	90	12159	10.3	D	419	58,136	57	406	57,432	115
Welgedacht	35	4162	4.3	J	372	43,859	45	363	42,163	46
I.C.I.*										
E. Champ	33	4731	8.1	D	155	23,814	42	162	23,719	56
Govt.G.M.A.	269	32046	50.2	D	1169	161,058	248	1133	155,814	302
New State	49	6584	1.0	D	224	33,001	5	295	38,580	21
Randfontein	365	42233	30.1	D	1749	209,969	145	1640	200,649	259
Wit. Gold	62	7419	2.6	D	297	35,378	12	294	33,886	24
Union										
East Geduld	149	44701	350.9	D	723	216,919	1711	714	214,235	1750
Geduld Prop.	108	15669	37.9	D	524	76,025	187	524	77,508	241
Grootvlei	200	43292	278.8	D	968	209,827	1343	973	218,919	1503
Marievale	63	15685	72.3	D	302	75,525	352	302	75,355	378
St. Helena	48	9517	5.1	D	223	43,768	14	—	—	—
Van Dyk	112	15937	12.7	D	535	77,414	62	500	75,093	98
General Mining*										
S. Roodep'rt	29	6326	23.3	J	299	64,748	249	294	65,836	248
W.Rand Con.	226	35486	140.8	D	1045	163,336	611	1039	166,369	805
Anglo-Transvaal*										
N.Klerksd'p.	12	1269	1.0	D	55	6,154	5	43	5,066	6
Rand Leases	190	31823	77.1	J	2030	340,796	876	2044	331,208	1037
Village M.R.	34	5309	15.5	J	375	58,302	190	381	57,881	212
Others										
N. Kleinf't'n.	110	14488	32.5	D	522	68,812	455	535	69,569	220
Spaarwater	10	2489	L2.5	D	51	11,795	L15	51	11,620	L13
W. Nigel*	15	—	3.9	J	119	—	7	110	—	20

Notes.—Profit figures are in all cases figures of working profit excluding profit from sale of gold at premium prices. In case of groups marked with an asterisk (*) profit includes sundry revenue. Profit figures preceded by **L** indicate a loss.

Halkyn United Goes from Strength to Strength

Halkyn District United Mines which owns lead mines in Flintshire made further good progress during 1951. Gross revenue expanded from £88,689 to £189,835 and after meeting all expenses, including provision for depreciation of £4,174 (£4,130), profit before tax was £167,490 compared with £70,673 in the preceding year. Tax attracted on the vastly improved earnings jumped to £100,971 against £38,000, but nevertheless the dividend distribution was stepped up from its maiden payment of 10 per cent to 30 per cent per 5s. share on the £205,676 issued capital and after writing off £28,715 the carry forward was left stronger at £11,847 compared with £5,316 brought in.

Production of lead concentrates substantially increased during the year amounting to 2,155 tons recovered from a mill throughput of 24,709 tons ore. 266 tons of zinc concentrates were also produced during the year and the possibility of expanding zinc production by various mill adjustments is being studied. The ore reserve position at the end of 1951, estimated to be equivalent to 9,000 tons of lead concentrates, showed an increase over the 1950 figure by some 1,700 tons.

Company Shorts

Consolidated Murchison Curtails Antimony Output.—Consolidated Murchison has decided to curtail production of antimony for the time being in view of the fall in demand for the metal, declared Mr. S. G. Menell, the company's chairman, at the annual meeting held in Johannesburg on June 6 last. Two shafts have temporarily been placed on a caretaking basis.

The chairman supplemented this information by saying that further recession in the price of antimony had come about as a result of an indicated over supply in world markets and it was impossible to state to what further extent, if any, the price of antimony would decline.

In reply to questions at the meeting the chairman confirmed that the two shafts had been placed on a caretaking basis temporarily, but that should demand for antimony concentrates be increased substantially, production could be stepped up at short notice. Moreover, he said, it had been possible to accumulate substantial stocks of concentrates at the mine which could be dispatched at short notice, and in addition, considerable tonnages of broken ore were available for milling whenever required.

Great Boulder Prop's Heavy Capital Expenditure.—Despite an increase in gold output by 7,009 oz. to 87,311 oz. during the calendar year 1951, the net profit of Great Boulder Proprietary Gold Mines fell to £A.128,661 compared with £A.175,705 in 1950. The reduction in profit was partly due to the increased working costs which, including mine development charges, rose from 57s. 7d. to 64s. 11d. per ton. Consequently, the dividend distribution was reduced to A.6d. (A.1s.), which absorbed £A.62,500. The sum of £A.135,000 (nil) was allocated to general reserve leaving a balance to be carried forward of £A.48,273 compared with £A.117,112 brought in.

The report states that payment of a final dividend was not recommended owing to the heavy capital expenditure on the new electric power plant. The annual meeting will be held on June 18, Mr. P. F. Cody is chairman.

"Tanks" Interim Dividend.—Tanganyika Concessions has decided to pay an interim dividend at the rate of 10 per cent on the ordinary stock of the company out of the amount of revenue reserves, on which U.K. income tax has been paid as at July 31, 1950, appearing in the balance sheet as at July 31, 1951, at £782,392. The dividend will be paid on or about July 18, to stockholders registered on June 10.

U.K. stockholders' attention is drawn to the fact that the Inland Revenue authorities have now withdrawn the concession announced in the Board's circular dated October 2, 1951, whereby U.K. income tax was deducted from dividends paid out of the balance of revenue reserves, on which U.K. income tax has been paid and retained by the company. As a result U.K. stockholders are advised that this dividend will be paid by Tanganyika Holdings, as paying agents, less U.K. income tax at 9s. 6d. in the pound and the tax handed to the inland revenue authorities.

U.K. stockholders will however have a claim for relief in respect of the double U.K. income tax suffered under Section 201 Income Tax Act, 1952. Stockholders will be advised of the extent to which this relief can be claimed as soon as agreement has been reached with the inland revenue authorities.

RAND MINES LIMITED

ANOTHER SUCCESSFUL YEAR
SOUND FINANCIAL POSITION

At the Fifty-Seventh Annual General Meeting of shareholders held in Johannesburg on May 30, 1952, **Mr. W. H. A. Lawrence,** the chairman, in the course of his remarks, said: Your company again had a successful year, total revenue amounting to £1,336,883, which was only £3,376 less than the figure for 1950.

Throughout the gold-mining industry, operations in 1951 were characterized by a continuing shortage of labour, both European and non-European, and by further increases in costs. In addition there was an increase in the rate of taxation. The impact of these conditions varied in severity as between mine and mine, depending upon circumstances, but in general, rates of milling and development were retarded, profits and dividend distributions were lower and pay limits higher. Some relief was afforded by an increase in the additional revenue received during 1951 from sales of gold at enhanced prices, but the amount of revenue now accruing to producers has been falling off during the past twelve months or so and is now at a much lower level than it was a year ago.

The position in regard to the trend of working costs of the gold-mining industry on the Witwatersrand is disturbing. Immediately prior to devaluation in September, 1949, the average was about 26s. 3d. per ton milled. The adjustments in the wages and other benefits of gold-mining employees which had to be made immediately after devaluation gave a sudden upward impetus to costs, thereby offsetting to some extent the immediate advantage normally gained from the time lag between devaluation and its resultant inflation. From the early part of 1950 to the latter part of 1951 costs rose fairly steadily at the rate of about 2s. per ton per annum, but since then there has been an increase in the tempo of the rise in costs, the averages for the last quarter of 1951 and the first quarter of 1952 being 2s. 5d. and 2s. 9d. per ton milled higher than for the corresponding periods a year previously.

The higher price structure, apart from its direct effects on working costs and therefore on working profits, has also resulted not only in an increase in the working capital necessary to carry on mining operations—due to the material increase in the amount of money required to be invested in stocks of stores in order to maintain these at a reasonable level—but also it has resulted in an increase in the cost of any capital expenditure that is necessary to maintain or extend operations. On top of this, taxation has absorbed an increasing proportion of gold-mining profits. The net result is that dividends are being doubly squeezed, firstly by the reduction in profits resulting from decreasing revenue and increasing costs, and, secondly, by the reduction in the amount available for distribution on account of increases in working capital, capital expenditure and the rate of taxation.

I would now like to make a few comments on the current domestic position at certain of the individual mines of the Central Mining Rand Mines group in which Rand Mines Ltd. is particularly interested as a shareholder.

The Blyvooruitzicht mine continues to prosper and, although it has not been possible yet to bring production up to the existing milling capacity largely due to the general labour shortage, the mine is already the premier gold-producer and profit-earner in the industry.

Good progress was made during the year with the work of opening up the Harmony Mine in the Orange Free State, in which your company has a substantial direct interest, as well as an indirect one through Central Mining Free State Areas Ltd., and Union Free State Coal & Gold Mines Ltd.

The coal mining industry again produced a record output during 1951, although operations continued to be restricted by inadequate railway transport facilities and an embargo was placed on exports half way through the year.

The industrial interests of the Central Mining-Rand Mines group generally had a successful year but operations were hindered directly and indirectly by the restrictive influence of the railway transport position.

In these troubled times it is, as I stated last year, a fortunate fact that South Africa's basic industries are soundly conditioned and have great potentialities, and that your company is in a sound financial position with substantial cash resources at its command. This position has only been built up, however, as a result of co-operative effort both here and overseas based on a hard core of faith in the inherent soundness of the country's economic potential. It must be remembered that we are still largely dependent on overseas capital for our continued progress; such progress is also largely dependent on the maintenance of international understanding and goodwill. These are facts which we cannot afford to disregard.

The Report and Accounts were adopted.

TRANSVAAL CONSOLIDATED LAND & EXPLORATION CO. LTD.

The Fifty-Seventh Annual General Meeting of Shareholders was held in Johannesburg on May 28.

Mr. T. Reekie, Chairman, presided and in the course of his speech said: Due to inadequate railway transport the Vandyks Drift Colliery earned £22,619 or 22 per cent less profit than in 1950. Mineral royalties were higher by £10,414 at £73,459, principally due to increased receipts in respect of the Groenfontein tin property, and income from investments decreased by £3,447 to £51,468. Investment realization at £67,635 increased by £34,589 and included an amount in respect of the liquidation distribution received on the Company's large shareholding in Holfontein (TCL) Gold Mining Co. Ltd. Against this, expenditure incurred on mineral interests at £20,637 was £7,114 higher. Largely due to these major variations the realized profit for 1951 was £7,374 higher at £237,904. This sum together with the balance of £194,357 standing to the credit of the Appropriation Account at the beginning of the year and a transfer of £1,400 from Shareholders Contingency Reserve gave a total of £433,661, from which the following appropriations were made: Provision for taxation was £7,582; forfeited dividends refunded to shareholders amounted to £1,418; a dividend of 1s. 9d. per share declared in December absorbed £81,396; making a total of £90,396. At the end of the year there was an unappropriated balance of £343,265.

At December 31, 1951, net cash and cash assets, after allowing for all current liabilities, amounted to £300,642 as against £191,300 at the end of the previous year. It will be seen therefore that the Company's cash resources which up to the end of 1949 were drawn upon heavily to establish Vandyks Drift Colliery have this year again been augmented.

Your Directors are satisfied however that this course is in the interests of Shareholders as they consider it to be a matter of prime importance that the Company should hold adequate liquid funds, as has been the policy in the past, to enable it to take advantage of favourable opportunities for investment or for the exploitation of its mineral interests. In this latter connection Shareholders will have noted the work which is being undertaken on the Farm Boschkoppie, in the district of Rustenburg, to which I will refer more fully later.

At the end of the year the book value of the Company's Vandyks Drift Colliery stood at £819,775, an increase of £28,910 which represents capital expenditure incurred during the year, the main items being underground equipment, European and non-European housing and the installation of plant to facilitate the delivery of coal to the specification of the South African Railways. Operations at the Colliery were restricted by an inadequate supply of railway trucks, with the result that the coal despatched for the year was 23,458 tons lower than the figure for the previous year. Due to the decrease in tonnage and the Government embargo on the export of coal during the second half of 1951, which is still in force, the profits decreased substantially. With effect from September 1, 1951, however, the Price Controller agreed to increase the maximum price at which coal may be sold on the inland market by Transvaal and Orange Free State producers. The new prices are more in keeping with costs of production but they only offset to some extent the loss of revenue due to the continued embargo on the export of coal.

The quality of the coal produced at Vandyks Drift continues to be high, mining conditions are good and the Colliery is in a position to make deliveries considerably in excess of current output. It is therefore favourably placed to take immediate advantage of any improvement in the railway transport position. Following the installation of the round coal crusher at the property the Transvaal Coal Owners' Association requested the Company to install additional screens, conveyor belts, bins, etc., at the cost of the Association, to assist in increasing the production of fine coal for power station requirements. This work is now in hand and is expected to be completed in the near future.

The Platinum Prospecting Association No. 3, in which the Company has a 45 per cent interest, completed its drilling programme on the Farm Boschkopie No. 685 in August, 1951. Encouraging values were encountered in the many intersections of the Merensky Reef, which has been proved to underlie the major portion of the Farm. In order to obtain further essential information as to the nature of the deposit a limited amount of development is being undertaken.

No. 2 Incline Shaft is being widened and deepened and No. 1 Incline Shaft is being sunk from the surface. By the end of April, No. 1 Shaft had reached a depth of 409 ft. from the collar and No. 2 Shaft had been widened and equipped to a total depth of 609 ft. At the latter shaft drives north and south on Reef have recently been started at an incline depth of 500 ft. Surface buildings for the present programme are nearing completion and most of the necessary plant and equipment has been installed and is in operation.

The Report and Accounts were adopted.

GOPENG CONSOLIDATED LIMITED

MR. STANLEY WICKETT'S REVIEW

The Thirty-Ninth Ordinary General Meeting of Gopeng Consolidated Ltd. was held on June 6, 1952 at the Registered Office, Redruth.

Mr. Stanley Wickett (chairman) presided.

Before proceeding with the ordinary business the chairman referred to the loss sustained by the company since the close of the financial year by the death on May 15, 1952 of Mr. Harry Rich, who had been a director of the company for about twenty-eight years. His services had been greatly valued, and the meeting stood in silence as a mark of respect.

The Report and Accounts for the year ended September 30, 1951, having been circulated for the prescribed time, were taken as read, as was also the Chairman's Statement, circulated with the report and accounts, which was as follows:

As the result of treatment of some high grade ground at the Mine and the exceptional price received for our product during the early part of the financial year the accompanying accounts for the period ended September 30, 1951, show a gross profit of £474,905.

BURDEN OF TAXATION

British and Malayan taxation at the rates in force last year required the provision of £282,200, the Malayan Government having in addition received £95,381 in Royalty and Tin Duty, a total of £377,581.

The Stockholders of this company, in common with others in Malaya, received no dividends from early in 1942 to late in 1947 and suffered grave loss of assets beyond that covered by compensation, in consequence of the Japanese occupation. When, therefore, the workings were reorganized under the rehabilitation scheme they were planned to provide good returns after rehabilitation was completed, in conformity with a long term scheme of work. After production re-commenced, however, the tin price was strictly controlled by the United Kingdom at much below the corresponding world prices of other metals, costs meanwhile having greatly increased. Later, when for a time the tin price became spectacular, the Governments were the principal beneficiaries by reason of the high level of taxation.

The figures given above illustrate the important contribution this company is making to the armaments drive and to the Revenues of Malaya and Britain. They should clearly demonstrate the justice of the claim presented to the Chancellor of the Exchequer by the Malayan Chamber of Mines and by your Board for total exclusion from the Excess Profits Levy.

Four dividends totalling 12s. per £1 Stock required a net amount of £126,151 and the sum of £60,000 was transferred to General Reserve bringing this account up to £100,000. After minor adjustments, the balance remaining on Profit and Loss Appropriation Account was increased from £45,777 to £51,423, which the directors propose to carry forward to the current year.

The advance received from the Malayan Government remained at £49,819 while expenditure on Rehabilitation at the Mine amounted to £97,751, both figures being carried forward in Suspense. Assessment of the company's claim for War Damage, which was expected last year, has still not been received.

GENERAL MANAGERS' REPORT

The Report of the General Managers, Messrs. Osborne and Chappel, which is attached, gives statistics and full particulars of work at the Mine which proceeded satisfactorily according to plan. Excellent progress was made with the extensive works necessary for the deviation of the Kampar Water Supply pipe line, and in anticipation of requirements under the Emergency Regulations costly regrouping of buildings was undertaken to provide increased security for the labour force. Moynalpy and Sanglop Estates continued to make profits from rubber sales.

Since the close of the financial year under review quarterly outputs of tin ore were:

October-December, 1951 ... 4,000 piculs = 238 tons of tin ore
January-March, 1952 ... 3,470 ,, = 206½ ,, ,,

The tin price is now considerably lower than that of the previous year, but the output to-date compares favourably as anticipated by the General Managers.

I am happy to state that no serious incidents occurred at the Mine although Communist terrorist activity was frequent in the vicinity. Visits for maintenance and repair of pipe lines in the jungle are carried out with strong escorts as military operations, the staff and labour force at the Mine being defended day and night by armed guards. That efficiency is maintained is proof of the fortitude of the men and women who have few opportunities for recreation and who, for approximately four years, have played a leading part in steadfastly withstanding Communist aggression.

To our General Managers, the Staff at the Mine and Estates, their wives, and the labour force, I once again record our thanks and I am sure that Stockholders will approve the action of the directors in authorizing the payment, at the discretion of the General Managers, of substantial Special Gratuities with respect to the year 1951.

The Report and Accounts were adopted.

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The figures given indicate the values we placed on these items of plant but we are prepared to give favourable consideration to any offer which may be submitted for any items and any further information which may be required can be obtained from Dow-Mac (Plant & Transport) Limited, Tallington, Stamford, Lincs.

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Luipaards Vlei Estate 29 1-6 % (July 1)
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New Jagersfontein Mining 2½% (July 1)
Patino Mines and Enterprises 75c. (June 20)
Rietfontein Consolidated 25% (July 1)
Robinson Deep B. 6¾% (July 1)
Scottish Australian Mining 4% (July 18)
Simmer & Jack Mine 10% (July 1)
Sub Nigel 40% (July 1)
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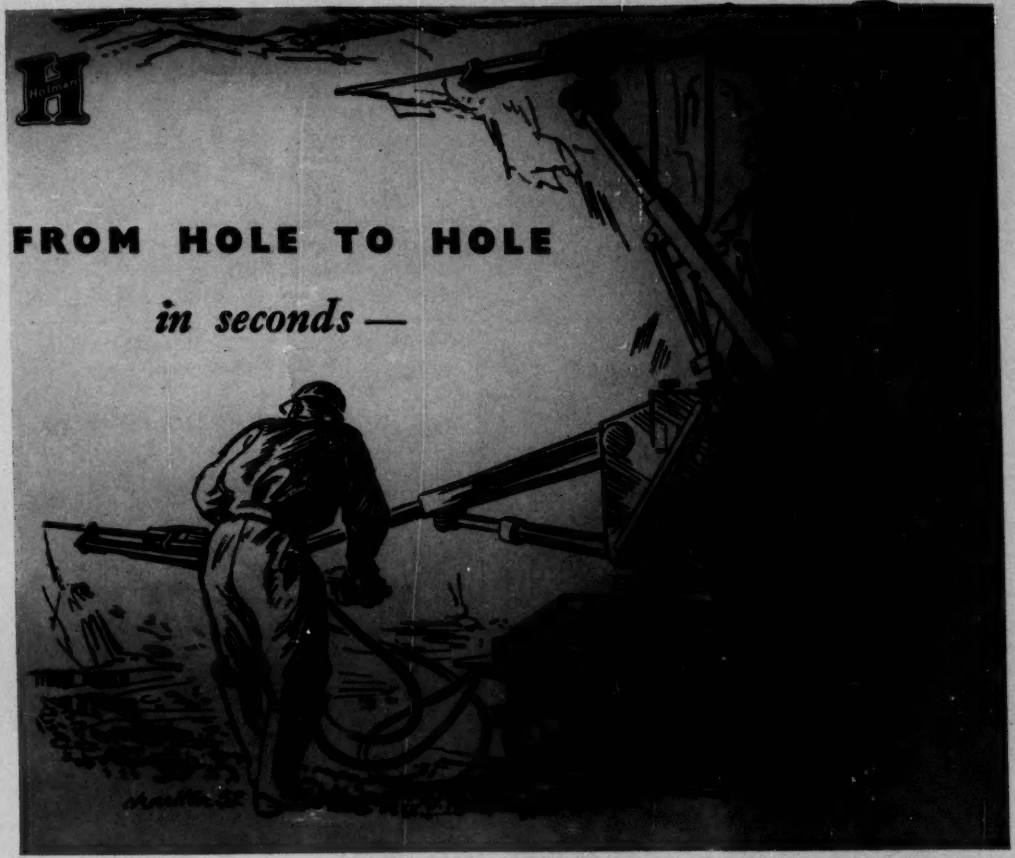

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